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ABSTRACT

Designed for use in community colleges, technical colleges, and technical institutes, this manual contains a course for teaching emergency care skills to both licensed practical and registered nurses employed in occupational health. The manual consists of three sections. In section 1 the need for the course, its content, objectives, length, availability, and requirements are outlined. Student requirements, developing test materials, and credit and certificates of completion are discussed in section 2. The third section consists of eleven lessons. Each lesson contains a list of objectives, required materials, and instructor references as well as a detailed lesson plan, including times allotted for various activities. Lesson topics include medico-legal aspects and record keeping; chest injuries, airway obstructions, and control of bleeding; shock; basic life support; oxygen therapy and equipment; facilities; injuries to the head, nervous system, abdomen, and genitourinary system; medical emergencies; childbirth; environmental emergencies; and patient handling. Appendixes contain a suggested class schedule, lesson titles and reading assignments, an instructor reference list, Occupational Safety and Health Administration requirements for occupational health medical facilities, a material safety data sheet, a list of competencies and skills for occupational health nurses, and emergency care skills for occupational health nurses' examinations. (MN)

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NUR 3043

EMERGENCY CARE SKILLS
FOR
OCCUPATIONAL HEALTH NURSES

October, 1980

Coordinated by
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OCCUPATIONAL PROGRAM SERVICES
DEPARTMENT OF COMMUNITY COLLEGES
RALEIGH, NORTH CAROLINA 27611

CE 028 107

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FOREWORD

Occupational Health Nurses have always strived to provide employees and employers in industry with competent health care evaluations and nursing skills. Because of the rapidly expanding body of knowledge and emergency care techniques, it is essential that these nurses update their education and skills practice, especially in critical emergency stabilization processes and procedures.

In 1977, work began by a Special Task Force of occupational health nurses and nurse educators in developing a formal educational program of sufficient depth and specific skills to achieve, review and update occupational health nurses' performance in an emergency. The Emergency Care Skills For Occupational Health Nurses course was developed so that they could better provide emergency care at the scene of accidents or illnesses thus, saving lives and preventing suffering and extended illnesses.

The ultimate goal in preparing this manual was to prepare a course for community colleges, technical colleges and technical institutes to administer and teach when requested by a group of interested occupational health nurses in a specific area. The course as written includes subject materials, objectives and materials and equipment for teaching both licensed practical and registered nurses. Compliance with the North Carolina Nurse Practice Act in teaching this course is the responsibility of the educational institutions and the occupational health nurses. Thus, occupational health nurses should be consulted during the planning and implementing of this course to insure that the legal requirements will be met and the educational content will be directed to the special needs of the nurses employed in industry.

The task force developed this manual as an effort to link education and occupational health manpower and to provide a means for evaluating, comparing and improving the special occupational health education and skills of nurses. The writers recommend that nursing instructors and occupational health nurses make an inventory of competencies and tasks for the scope of practice for both licensed practical and registered nurses employed in industry; that a listing of these competencies and tasks be made available to occupational health nurses, educational instructors and employers. By following the guidelines, objectives and instructional content for this course, with the assistance of local advisory occupational health nurses, educational institutions should be able to offer effective continuing education programs that provide a more realistic matching of educational output with job opportunities, requirements and responsibilities. The members of the task force recommend the materials contained in this manual as their responsibility for promoting continuing education.

Acknowledgments

A Special Task Force for the purpose of developing a continuing education course for Emergency Care for Occupational Health Nurses was appointed in 1977 by Anne Murphy, R.N., COHN, then President of the North Carolina Association of Occupational Health Nurses. This Task Force, in conjunction with the Occupational Program Services Division, North Carolina Department of Community Colleges, developed this curriculum. Those participating were:

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Questions regarding this course or course materials should be directed to these persons.

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I. CONTINUING EDUCATION PROGRAM OF EMERGENCY CARE SKILLS FOR OCCUPATIONAL HEALTH NURSES

This curriculum guide has been prepared to aid the instructor in conducting a basic course for continuing education of registered and licensed practical occupational health nurses. It contains detailed lesson plans of the course, guidelines for developing test materials and for conducting lessons in which student knowledges and skills are evaluated, guidelines for effective teaching, supplementary references for the instructor and samples of forms to be handed out to the nurses.

The course covers the most frequently used techniques of emergency medical nursing care presently considered within the responsibilities of the occupational health nurse.

The course emphasizes the review of the nurse's skill in recognition of symptoms of illnesses and injuries and proper procedures of emergency care. As such, reliance is placed heavily on demonstration and practice as a teaching method. Each lesson allows for practice of specific skills, with competency criteria designed to assure attainment of proficiency levels in all skills.

This course is specifically designed for registered nurses employed in occupational health. Much of the content will serve as a basic review and update of emergency care skills for any registered or licensed practical nurse. Licensed practical nurses should participate only in those skills that are legal within their scope of practice.

STATEMENT OF NEED

An important role of the occupational health nurse is the ability to provide stabilization of an employee with a life-threatening injury or illness until such time as definitive care can be provided. Most frequently, the facilities of hospital and emergency room care are not readily available to the occupational site. Therefore, it is the responsibility of the occupational health nurse to initiate appropriate emergency care until further help is available.

Over 600 nurses are employed in the field of occupational health in North Carolina. The emergency care skills of these nurses must be updated periodically to ensure their ability to provide stabilization of the employee with a life-threatening injury or illness.

COURSE DESCRIPTION

This course teaches the emergency principles and skills needed by the occupational health nurse to provide emergency care in the occupational setting. Special emphases include life-threatening emergencies, injuries, common medical emergencies, lifting and moving patients and environmental emergencies.

GOAL

The goal of this course is to provide the occupational health nurse with necessary knowledge and skills to carry out specific critical emergency stabilization procedures.

OBJECTIVES

In addition, because of the rapidly expanding body of emergency medical service knowledge, ongoing education is essential for nurses to update knowledge and to renew and refine skills. The Emergency Care Skills for Occupational Health Nurses Course is designed for the participants to achieve the following objectives:

1. To review the overall role and responsibilities of the occupational health nurse in performing emergency care.

2. To increase skill in triage and instituting emergency treatment procedures in the occupational setting.

3. To develop skill in the use of and care for equipment required to accomplish her/his job.

LENGTH OF COURSE

The total course consists of twelve lessons involving thirty hours of classroom and laboratory practice. The first lesson is devoted to an overview and description of the training course and an overview of anatomy and physiology. It is followed by lessons on life-threatening emergencies, injuries, common medical emergencies, lifting and moving patients and environmental emergencies.

AVAILABILITY OF COURSE

The course outline will be available through the Department of Community Colleges of the State of North Carolina. A copy has been made available to each local constituent association of occupational health nurses in the state.

When an association has determined there is sufficient interest among nurses for the course, a designated representative should contact the office of Adult Continuing Education at the local community college/technical institute. The office and association representative will then work together to provide the course for local nurses.

CONTINUING EDUCATION UNITS

Three continuing education units (30 CERPS) may be given for this course, if the course is planned according to time allotments for each unit. However, the time may be extended for special content and clinical

application. Approval has been granted by the North Carolina State Nurses' Association for registered nurses to qualify for continuing education recognition points for courses available at most community colleges, technical colleges and technical institutes in the North Carolina Community College System. CEAPS for licensed practical nurses may be obtained from the North Carolina Licensed Practical Nurses' Association.

AUDIOVISUAL AIDS. Audiovisual aids may be used according to locally available materials relating to each lesson. No specific slides or films are recommended since there is no specific source at present which can completely satisfy the unique requirements of this course. The instructor may wish to develop the teaching aids to augment his/her own needs, or may have access to slides, films or charts.

LESSON REQUIREMENTS. Each lesson includes the requirements for numbers of instructors, instructor resume, materials and equipment recommended. The number of instructors specified is the maximum number needed for both the lecture/demonstrations and practice periods of the lesson. It is assumed that the lead instructor who gives the lecture and demonstration period of the lesson will also participate as an instructor in the practice period of the lesson.

Materials and equipment requirements are specified on a lesson or student basis as appropriate. The instructor should assure that all equipment specified for the lesson is available, operable and ready for use before the start of each lesson. All equipment recommended for demonstration and practice periods should be utilized in the lessons. They have been specially chosen to introduce realism into the learning situation and to provide techniques for direct evaluation of student performance. If there are more students for a given piece of equipment than that specified, additional time will be required in order that students may attain skill proficiency.

OUTLINE OF INSTRUCTION. This part of the lesson plan gives detailed procedures for conducting the lesson. Estimates of projected time for each topic area within a lesson are included. Time estimates are given for two purposes:

1. To aid the instructor in maintaining the lesson on schedule.

2. To provide a means by which the instructor can determine the emphasis to be given to a specific area. For example, the course emphasizes skills of emergency care as opposed to details of anatomy and physiology. Therefore, the instructor will find that time estimates for anatomy and physiology are generally short.

The instructor is advised that time estimates devoted to lecture periods of each lesson are not extensive. As appropriate, supervised practice is included in each lesson to assure that students become

proficient in skills. In general, practice periods tend to be placed near the end of each lesson; the instructor may therefore extend time for these laboratory periods as necessary to assure attainment of specific skills.

The basic outline of each lesson usually includes the following:

1. Administrative matters--taking attendance, making announcements.
2. Review of previous lesson.
3. Lecture on new material.
4. Demonstration of new skills.
5. Practice of new skills.
6. Brief verbal summary of the main points covered.

TEXTBOOK. In general, materials presented in each lecture follow their presentation in the course text: Emergency Care and Transportation of the Sick and Injured, second edition, copyright 1977, prepared by the Committee on Injuries of the American Academy of Orthopaedic Surgeons. Since it is recommended as the primary reference for the course, each student and instructor should be provided with a copy. It is available through the American Academy of Orthopaedic Surgeons, 430 North Michigan Avenue, Chicago, IL 60611. The level of detail in each lesson plan is therefore brief. It includes only the major topic coverage and special points to be emphasized. Where information is taken from a source other than the course text, that reference source is indicated in parentheses beside the topic area covered.

II. QUALIFICATIONS AND RESPONSIBILITIES OF COORDINATORS, INSTRUCTORS AND STUDENTS

Coordinators

Course coordinators will consist of one occupational health nurse and one coordinator from the community college, technical college or technical institute with expertise in emergency medical care.

Instructors

The instructor for each lesson will be responsible for the lecture/demonstration period of that lesson. The instructor should be assisted as necessary by other instructors in the practice period of the lesson. Since all instructors will be responsible for evaluating students for the attainment of specific skills, they must possess the following qualifications:

1. Be experienced in the field of emergency care in the given topic area.

2. Be able to use and maintain equipment required for the topic area, including that required for teaching the topic area, i.e., mannikins, projection equipment.

Each instructor should review with the course coordinators his/her role and responsibilities and course content before conducting the class.

STUDENT REQUIREMENTS. Students will be evaluated on the following criteria:

1. Theory and Principles
2. Laboratory Performances
3. Attendance

Theory and Principles: In this area, students must receive a passing grade as determined by the course coordinators. Special make-up sessions may be provided by the instructor as appropriate.

Laboratory Performances: In the area of Laboratory Performances, students either pass or fail. Students must demonstrate proficiency in the laboratory, not only on the final test, but also in each testing session of selected topic areas. Special makeup sessions may be provided by the instructor as appropriate.

Attendance: Students will be required to attend all lessons. At the discretion of the instructor, a lesson may be missed if the student can successfully demonstrate attainment of all skills and knowledge covered in that lesson.

DEVELOPING TEST MATERIALS: Students should be tested on both clinical and practical knowledge. Theory can be evaluated by means of written tests. Laboratory practice is evaluated by means of demonstration; techniques for evaluating are included in each lesson. It is the responsibility of the instructor who conducts a practice session to develop competency criteria for evaluating skills included in each lesson. A sample final written examination has been developed and is included in Appendix G.

CREDIT/CERTIFICATE OF COMPLETION: Students who successfully pass both written and the practical portions of this program will be issued a certificate from the community college, technical college or technical institute in which the course was administered. CEU's, CERP's or CEAP's may be awarded upon request.

III

LESSON I (Time: 1:50)

INTRODUCTION, REVIEW, MEDICO-LEGAL ASPECTS, RECORD KEEPING

Objectives

Inform the student of

- Course objectives.
- Scope.
- Procedures.
- Requirements for satisfactory completion.

Be able to

- Explain legal aspects relating to emergency care.
- Provide an overview of anatomy and physiology.

Requirements

Number of Instructors

- One instructor.

Instructor References

- *AAOS Chapters 2, 3, 4, 50.
- Federal laws, state statutes and local ordinances pertaining to nursing.
- OSHA requirements for occupational health medical facilities.

Materials, Equipment (See appendices)

- Registration card (one for each student).
- American Academy of Orthopaedic Surgeons' text on Emergency Care and Transportation of the Sick and Injured, Second Edition (one for each student).
- The Laryngectomee (one for each student).
- Prepared list of lesson titles and reading assignments (one for each student).
- Material Safety Data Sheet, U.S. Department of Labor, OSHA (one for each student).

*American Academy of Orthopaedic Surgeons. Emergency Care and Transportation of the Sick and Injured. Second Edition, 1977.

INTRODUCTORY REMARKS (Time: 0:15)

1. Introduce self.

2. Welcome students.

3. Give recognition to the fact that:

   Nurses will represent a variety of different occupational health settings.

4. Describe briefly the scope of the course:

   Basic principles and practice in all aspects of emergency medical nursing.

ADMINISTRATIVE MATTERS (Time: 0:15)

1. Hand out the following:

   a. Registration cards.
   b. AAOS text: Emergency Care and Transportation of the Sick and Injured.
   c. The Laryngectomee.
   d. List of lesson titles and reading assignments.
   e. Material Safety Data Sheet, U.S. Department of Labor, OSHA.

2. Identify time and place of each session.

3. Ask students to complete and turn in registration cards.

SCOPE OF COURSE (Time: 0:20)

1. Refer class to sheet containing lesson titles and reading assignments.

2. Indicate that emphasis will be placed on treating life-threatening situations, injuries and other medical-nursing emergencies.

3. Differentiate between signs and symptoms and list those of primary concern.

4. Encourage class to participate by asking and answering questions.

5. Discuss implications of differences between what is presented in the course and what the nurse may have learned or experienced:

   a. Medical aspects of emergency care taught in the course should be followed; some exceptions are made because of local preferences.
   b. Local operational procedures; laws and ordinances should be followed.
   c. Operating and maintenance procedures for vehicles and equipment should be based on company policy.

6. Discuss briefly requirements for satisfactory completion of course:

   a. Attendance--student is expected to attend all classes.
   b. Practice, Test and Evaluation Sessions--written test and demonstration of laboratory practice.
   c. End of Course Examination--written and laboratory practical tests.

7. Emphasize only two grades--Pass or Fail.

8. Solicit questions regarding the preceding.

9. Explain that the remainder of the lesson will be devoted to a discussion of:

   a. The functions and responsibilities of the nurse in an occupational health setting.
   b. Medico-nursing legal aspects.
   c. Communication skills.

MEDICO-NURSING LEGAL PROBLEMS (Time: 0:50)

1. Describe federal laws, state statutes and local ordinances pertaining to (information must be developed in accordance with laws, statutues and ordinances of area in which course is presented):

   a. Liability insurance, limits of training and ability, protection under "Good Samaritan" law and abandonment, legal aspects nursing, OSHA required medical facilities in occupational setting, records and standing orders.

   b. Patient care situations (i.e., mentally disturbed or unruly, accompaniment of females, use of restraining devices, management of alcoholics, reporting of animal bites, management of attempted suicide, dying declaration and disposition of dead.)

SUMMARY OF LESSON (Time 0:10)

1. Briefly summarize the lesson emphasizing the following points:

   a. Scope of the course.
   b. Time and location of each class.

LESSON II (Time: 2:20)

INJURIES TO CHEST, AIRWAY OBSTRUCTION,
BLEEDING AND CONTROL OF BLEEDING

Objectives

Be able to explain

- Importance of oxygen to body functioning.
- Signs of airway obstruction.
- Anatomy of laryngectomy and tracheostomy patients.
- Resuscitation of laryngectomy and tracheostomy patients.
- Mechanics of circulation.
- Signs of external bleeding: artery, vein, capillary.
- Signs of internal bleeding.
- Use of pressure dressings to control bleeding.
- Use of pressure points to control bleeding.
- Use of inflatable splints to control bleeding.
- Dangers and use of tourniquets in controlling bleeding.

Be able to demonstrate

- Manual techniques of airway care.
- Removal of foreign body from the airway.
- Location of carotid, temporal, femoral, brachial and radial arteries.
- Control of bleeding by a pressure dressing.
- Application of inflatable splints to arm and leg.
- Dressing and bandaging of sucking chest wound with or without a rib fracture.

Requirements

Number of Instructors in laboratory practice

- One instructor for each 10 students.

Instructor References

- AAOS Chapters 5, 6, 7, 8, 10; pp 89-93.
- The Laryngectomee.

Materials, Equipment

- Resuscitation mannikin (one for each 10 students).
- Blankets or mats (one for each two students).
- Inflatable splints (arm and leg) (one set for each 10 students).

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON

None

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to the class the objectives of the lesson.

2. Briefly explain that this lesson and the next three lessons cover life-threatening emergencies including:

   a. Airway obstruction.
   b. Pulmonary arrest.
   c. Cardiac arrest.
   d. Bleeding.
   e. Shock.

   Emphasize that the skills learned in these lessons are vitally important to the patient and, performed correctly, may mean the difference between life and death.

BASIC MECHANICS OF RESPIRATION (Time: 0:05)

1. Briefly explain the anatomy and physiology of the respiratory system and the purpose and functions of the following body parts:

   a. Pharynx.
   b. Esophagus.
   c. Trachea--epiglottis, larynx and windpipe.
   d. Bronchi.
   e. Lungs.
   f. Control center for breathing.

2. Ask member of class to identify and describe types of chest injuries and resulting complications (i.e., open vs. closed, rib fractures, sucking chest wounds, pneumothorax, hemothorax, flail chest, tension pneumothorax, pericardial tamponade, traumatic asphyxia).

3. Describe general care for chest wounds.

4. Describe signs and symptoms of a rib fracture and ribs most likely to be fractured.

5. Demonstrate immobilizing a rib fracture with cravat bandage; discuss use of swathe and tape.

6. Ask member of the class to describe the cause and consequences of a sucking wound of the chest.

7. Describe the emergency care for a sucking wound of the chest emphasizing the need to cover hole with an airtight dressing and not to remove impaled foreign objects.

8. Describe the characteristics and care of a flail chest.

9. Mention briefly the cause, signs and symptoms of traumatic asphyxia and hemothorax; indicate primary emergency care measures (i.e., resuscitation, oxygen, preventing shock and arresting bleeding).

10. Describe the cause and consequences of pneumothorax and the special care of tension pneumothorax.

11. Discuss care for pneumothorax and tension pneumothorax with and without a sucking chest wound.

AIRWAY CARE (Time: 0:10)

1. Ask a member of the class to describe how he/she would know whether or not an unconscious patient was breathing. Critique his/her comments making sure that in addition to chest(abdomen) movement, he/she should be able to <u>feel</u> and <u>hear</u> exhaled air at nose and mouth.

2. Describe the signs of inadequate or abnormal breathing.

3. Explain obstruction of the airway by the tongue and maximum extension of the head to maintain an open airway.

4. Demonstrate on a mannikin the four basic maneuvers for positioning the head and jaw properly so as to provide an open airway:

   a. Tilt head backward.
   b. Chin lift maneuver.
   c. Jaw lift maneuver.
   d. Turning to face-down position.

5. Discuss with class manual procedures for clearing the airway of:

   a. Blood, vomit, phlegm.
   b. Foreign body obstructions--adults.

6. Describe briefly airway care in the case of chest injuries (i.e., flail chest, sucking chest wound, pneumothorax).

THE LARYNGECTOMEE (Time: 0:10)
(First Aid for Laryngectomees)

1. Explain that, although rare, the nurse may encounter a laryngectomee in the performance of his/her duties and, therefore, should be thoroughly familiar with the techniques of emergency care for this patient.

2. Describe physiology of the head and neck before and after a laryngectomee and tracheostomy.

3. Explain the difference between a laryngectomy and a tracheostomy.

4. Explain technique of airway care for the laryngectomee emphasizing:

   a. Proper positioning of the head to maintain shape of the stoma.
   b. Dangers of the prone position for the laryngectomee (i.e., danger of sucking dirt particles into the stoma, danger of pressing stoma into cot bedding and thus creating a breathing problem).
   c. Importance of not removing the tube from a patient who has had a temporary tracheostomy.

5. Explain mouth-to-stoma technique of resuscitating the laryngectomee.

6. Emphasize the importance of checking patients for medical problems and for "checking the neck for a laryngect."

BASIC MECHANICS OF CIRCULATION (Time: 0:10)

1. Briefly review the functions of the following elements of the circulatory system:

   a. Heart.
   b. Arteries.
   c. Veins.
   d. Capillaries.

2. Explain the meaning of the pulse, the normal pulse rate and the location of:

   a. Carotid artery.
   b. Brachial artery.
   c. Femoral artery.
   d. Temporal artery.
   e. Radial artery.

3. Describe the composition, characteristics and vital functions of blood.

4. Explain normal amounts of blood in adults and amount of blood loss that is serious.

EXTERNAL BLEEDING (Time: 0:10)

1. Discuss types of bleeding, their significance and signs:

   a. Artery.
   b. Vein.
   c. Capillary.

2. Using a universal dressing or gauze pads, demonstrate technique of controlling external bleeding by direct pressure over the wound.

3. Locate the femoral and brachial artery pressure points and explain their use in controlling bleeding of the extremities. Emphasize that direct pressure over the wound is normally a better way to control bleeding.

4. Have each member of the class find his own femoral and brachial arteries as well as those of his neighbor.

5. Describe and demonstrate use of inflatable splints to control bleeding of the arm and leg.

6. Describe how to apply a tourniquet emphasizing the following points:

   a. When to use a tourniquet (i.e., only in severe emergency where bleeding cannot be controlled in any other way).
   b. Dangers of indiscriminate use.
   c. Importance of using a wide bandage.
   d. Importance of marking patient.

7. Ask a member of the class to give causes of nosebleeds and the technique of care in the case of:

   a. Skull fractures.
   b. Other causes.

8. Emphasize that bleeding from the nose or ear may mean there is a skull fracture and that, if a skull fracture is suspected, bleeding should not be stopped.

INTERNAL BLEEDING (Time: 0:10)

1. Ask a member of the class to give the signs and symptoms of internal bleeding. Critique his/her comments.

2. Discuss examples of internal bleeding in the body cavity and extremities, indicating potential blood loss for fractures of the femor, pelvis, arm.

3. Discuss the dangers of internal bleeding emphasizing that anyone with internal bleeding is a high priority victim.

4. Describe techniques of care for the patient bleeding internally in:

   a. The chest.
   b. The abdomen.
   c. An extremity.

5. Discuss the importance of administering oxygen to a person suffering from blood loss.

TEN MINUTE BREAK

PRACTICE (Time: 0:30)

Note: The time frame assumes that there will be one instructor for every 10 students. If there are more than 10 students per instructor, additional time will be required for practice.

1. Divide class into groups of 10.

2. Have class members practice the following:

   a. Removal of foreign bodies from the airway.
   b. Positioning head to provide open airway.
   c. Application of inflatable splints to arm and leg.

SUMMARY OF LESSON (Time: 0:05)

1. Reassemble class.

2. Briefly summarize the lesson emphasizing the following points:

   a. Proper positioning of head for maintaining an open airway.
   b. Importance of checking patients for laryngectomees.
   c. Importance of and techniques of controlling severe bleeding.
   d. Signs of and techniques of care for the patient suffering from internal bleeding.

LESSON III (Time: 2:25)

SHOCK

Objectives

Be able to explain

- Signs of shock.
- Importance of preventing shock and technique of caring for the patient in shock.
- Principles of intravenous therapy.

Be able to demonstrate

- Venipuncture for infusion of intravenous therapy.

Requirements

Number of Instructors

- One instructor for each five students.

Instructor References

- AAOS, Chapter 9.

Materials, Equipment

- Materials for practice for venipuncture. Provide one set for each five students.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.
2. Make announcements.

REVIEW OF PREVIOUS LESSON

None

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to the class the objectives of the lesson.

SHOCK (Time: 0:40)

1. Define shock and discuss its physiological basis:

   a. Changes in vascular tone.
   b. Changes in volume and composition of blood.
   c. General circulatory failure.

2. Describe and discuss causes and types of shock:

   a. Hemorrhagic shock.
   b. Respiratory shock.
   c. Neurogenic shock.
   d. Psychogenic shock.
   e. Cardiac shock.
   f. Septic shock.
   g. Anaphylactic shock.

3. Describe and discuss the signs of persons in shock:

   a. Pulse weak and rapid.
   b. Skin cold and clammy.
   c. Sweating.
   d. Face pale or cyanotic.
   e. Breathing shallow, labored, rapid, possibly irregular or gasping.
   f. Eyes dull or lusterless with dilated pupils.
   g. Restlessness and anxiety.
   h. Thirst.
   i. Nausea or vomiting.
   j. Low blood pressure.

4. Describe signs of anaphylactic shock:

   a. Skin.
   b. Respiratory system.
   c. Circulation.

5. Ask a member of the class to explain how he/she would prevent shock. Critique his/her comments emphasizing that basically preventing shock means caring for the entire patient, i.e.:

   a. Restore breathing and heartbeat as necessary.
   b. Control bleeding.
   c. Administer oxygen.
   d. Elevate lower extremities.
   e. Splint fractures.
   f. Avoid rough handling.
   g. Prevent loss of body heat.
   h. Keep lying down (except for some heart and lung conditions).

6. Describe care for anaphylactic shock:

   a. Immediate transport to hospital.
   b. Prevent shock.
   c. Administer oxygen if cyanotic.
   d. Give pulmonary or CPR as required.

7. Explain the use of IV's for treating shock and the technique of venipuncture:

   a. Type of IV fluids.
   b. Types of venipuncture apparatus.
   c. Drugs.
   d. Standing orders.

8. Demonstrate venipuncture and administration of IV fluids.

TEN MINUTE BREAK

PRACTICE (Time 1:20)

Note: If there are more than five students per instructor, mannikin or item of equipment, additional time will be required for practice.

1. Divide class into groups of five.

2. Have each class member practice venipuncture for infusion of intravenous therapy.

SUMMARY OF LESSON (Time: 0:05)

1. Reassemble class.

2. Briefly summarize the lesson emphasizing the seriousness of shock and importance of caring for the whole patient in order to prevent shock.

LESSON IV (Time: 3:00)

BASIC LIFE SUPPORT

Objectives

Be able to explain

- Mechanics of circulation.
- Importance of oxygen to body functioning.
- Signs of cardiac arrest.
- Techniques of cardiopulmonary resuscitation.
- Dangers to the patient if cardiopulmonary resuscitation is delayed or performed incorrectly.
- Mechanics of respiration.
- Techniques of pulmonary resuscitation.

Be able to demonstrate

- Cardiopulmonary resuscitation by lone rescuer.
- Cardiopulmonary resuscitation by a team of rescuers.
- Mouth-to-mouth (nose) technique of pulmonary resuscitation.
- Chest-pressure arm lift (Silvester) method of pulmonary resuscitation.

Number of Instructors

- One instructor for each 10 students.

Instructor References

- AAOS, Chapter 10.
- American Heart Association Cardiopulmonary Resuscitation Manual for Instructors.
- Standard First Aid and Personal Safety, Second Edition, American National Red Cross, pp 71-72.

Materials, Equipment

- Cardiopulmonary resuscitation mannikin (1 for each 10 students).
- Listerine with sponges for cleaning mannikin's face or plastic wrap for protecting mannikin's face.
- Bag-mask resuscitator (1 for each 10 students).
- Stretcher.
- Chalkboard with chalk and eraser.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON

None

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to the class the objectives of the lesson.

2. Emphasize that it is especially critical that the techniques of pulmonary and cardiopulmonary resuscitation taught in this lesson be learned correctly. Therefore, the student will be given several opportunities throughout the course to practice this technique.

PULMONARY RESUSCITATION
MOUTH-TO-MOUTH (NOSE) TECHNIQUE OF
PULMONARY RESUSCITATION (Time: 0:10)

1. Discuss advantages of mouth-to-mouth (nose) technique of pulmonary resuscitation:

   a. Requires no extra equipment.
   b. Requires only one person.
   c. Can be applied immediately in any situation (automobile, water).
   d. Gives best ventilation of the lungs.
   e. Frees rescuer's hand to assure airway, decompress distended stomach, etc.
   f. Less fatiguing to rescuer.
   g. Easier to gauge adequacy of resuscitation.

2. Explain and demonstrate mouth-to-mouth technique on a mannikin emphasizing:

   a. Importance of starting resuscitative efforts without delay.
   b. Necessity of a clear airway.
   c. Proper resuscitation rates.

d. Common causes of failure.
   1) Inadequate head tilt.
   2) Inadequate force of breathing.
   3) Lack of tight seal.
e. Necessity to pinch nose closed.
f. Necessity to break contact with patient's mouth to allow him to exhale.
g. Importance of watching for chest movement and listening or feeling for exhaled air.

3. Demonstrate technique for forcing air out of the stomach if stomach becomes distended.

4. Explain variations for mouth-to-nose breathing, pointing out that the patient's mouth must be open for exhalation.

5. Ask a member of the class to suggest how long resuscitation attempts, once started, should be continued. Emphasize that resuscitation attempts should be discontinued only when the patient breathes spontaneously or when the rescuer is directed by a physician to stop.

6. Discuss sanitary aspects of direct mouth-to-mouth resuscitation explaining that a clean handkerchief or gauze square placed over the patient's mouth will not be a serious impediment to easy inflation of the lungs.

PRACTICE (Time: 0:40)

Note 1: The time frame assumes that there will be one instructor and one mannikin for every 10 students. If there are more than 10 students per mannikin and instructor, additional time will be required for practice.

Note 2: In the practice session, only one student at a time can work on the mannikin. While not working directly on the mannikin, other students should be required to observe and attend to the critique of the individual working on the mannikin.

1. Divide class into groups of 10.

2. Have each class member practice both mouth-to-mouth and mouth-to-nose pulmonary resuscitation on a mannikin.

TEN MINUTE BREAK

MANUAL PRESSURE METHODS OF PULMONARY RESUSCITATION (Time: 0:15)

General

1. Comment that one manual pressure technique of pulmonary resuscitation will be taught, the chest-pressure arm lift (Silvester) method.

2. Emphasize the following points:

   a. Direct oronasal techniques of pulmonary resuscitation are superior to all other methods of resuscitation.
   b. Manual pressure methods are inferior to oronasal methods since they move an inadequate volume of air.
   c. Manual pressure methods are being taught here only so that the rescuer will have an alternate method should it be impossible to use the oronasal technique.
   d. Manual pressure methods should be used only when severe facial injuries prevent use of oronasal methods (or for the laryngectomee, severe neck injuries).
   e. The chest-pressure arm lift technique is the only manual pressure method that can be used with cardiopulmonary resuscitation (taught in Lesson 4).

Chest-pressure arm lift method

1. Describe and demonstrate method on a member of the class, emphasizing the importance of maximum extension of the head to maintain an open airway.

2. Ask class to suggest medical conditions/injuries that would preclude use of the technique and discuss examples given (i.e., severe chest injuries, arm injuries).

3. Explain variations for laryngectomees.

4. Explain techniques for changing rescuers if one rescuer becomes fatigued.

SIGNS OF CARDIAC ARREST (Time: 0:05)

1. Ask a member of the class how he/she would know if a patient has cardiac arrest. Critique his/her comments emphasizing that all signs should be present before a rescuer attempts cardiopulmonary resuscitation:

   a. Patient is not breathing.
   b. Patient has no carotid (or femoral) pulse.
   c. Pupils of both eyes are dilated and will not react to light.

2. Demonstrate location of the carotid pulse and have each class member find their own pulse.

3. Explain appearance of dilated pupils during cardiac arrest reemphasizing that the pupils will not react to light.

TECHNIQUE OF CARDIOPULMONARY RESUSCITATION (Time: 0:20)

1. Demonstrate on a mannikin the proper location of pressure area on the sternum. Reemphasize dangers to internal body parts from improper placement of the hands on the sternum.

2. Using a mannikin, demonstrate the technique of cardiopulmonary resuscitation by one rescuer.

3. Explain variations of technique for two rescuers working as a team.

4. Ask a member of the class to summarize the ABC's of cardiopulmonary resuscitation.

5. Ask a member of the class to tell how he/she would know if their attempts at cardiopulmonary resuscitation were effective (emphasize that when working as a team, the ventilating rescuer should feel a pulse with each compression).

   a. Pulse felt in carotid artery.
   b. Constricted pupils.
   c. Improved skin color.
   d. Possibly spontaneous gasping respirations.
   e. Possibly spontaneous movement of patient's arms or legs.
   f. Heart may resume normal beating.

6. Ask a member of the class to give examples of instances when cardiopulmonary resuscitation should not be attempted and discuss examples.

7. Ask a member of the class how long cardiopulmonary resuscitation once started should continue. Critique his/her comments emphasizing that resuscitative efforts should be stopped only when patient's heart resumes normal beating or when directed to do so by a physician.

8. Demonstrate technique of continuing resuscitation while loading and transporting a patient on a stretcher.

PRACTICE (Time: 1:10)

Note 1: If there are more than 10 students for each instructor or mannikin, additional time will be required for practice.

Note 2: Students who are not working directly on the mannikins should either practice taking carotid pulses or observe the students working on the mannikins.

1. Divide the class into groups of 10.

2. Have each class member practice the following:

   a. Location of carotid pulse on theirself and another class member.
   b. Cardiopulmonary resuscitation of a mannikin using direct oro-nasal technique of ventilation. Student performs technique alone and as a member of a team.

LESSON V (Time: 2:10)

OXYGEN THERAPY AND EQUIPMENT

Objectives

Be able to demonstrate the use of

- Mechanical aids to breathing.
- Mechanical aids to pulmonary resuscitation.

By means of the

- Two-way (S-shaped) airways.
- Bag-mask resuscitator.
- Oropharyngeal airways.
- Suction unit.
- Oxygen equipment.

Requirements

- One instructor for each 10 students.

Instructor References

- AHOS, Chapter 11.
- Manuals for equipment: bag-mask resuscitator, oxygen equipment, suction apparatus.

Materials, Equipment

- Resuscitation mannikin (one for each 10 students).
- Listerine with sponges for cleaning mannikin's face or plastic wrap for protecting mannikin's face.
- Two-way (S-shaped) airways: large child/adult size (one for each 10 students).
- Oropharyngeal airways: adult size (one for each 10 students).
- Bag-mask resuscitator: mask sizes for adult (one for each 10 students).
- Suction apparatus with catheter (one for each 10 students).
- Oxygen tanks and transparent masks for adults (one for each 10 students).
- Chalkboard with chalk and eraser.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON (Time: 0:10)

1. Ask individuals in the class to describe or to demonstrate on a mannikin as appropriate the following points. Have class critique responses and discuss as necessary:

   a. Signs of inadequate breathing.
   b. Signs of pulmonary arrest and cardiac arrest.
   c. Technique of maximum extension of head to maintain open airway.
   d. Mouth-to-mouth technique of pulmonary resuscitation.
   e. Injuries requiring manual pressure methods of resuscitation.
   f. Hazards of delaying CPR when needed.

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to the class the objectives of the lesson.

2. Mention that there might be slight variations in equipment produced by different manufacturers. However, procedures for operation and use taught here will be basically the same for all equipment.

MECHANICAL AIDS TO AIRWAY CARE

<u>Oropharyngeal airways</u> (Time: 0:05)

1. Display and describe purpose and use of the various sizes of oropharyngeal airways.

2. Describe proper technique for inserting an airway emphasizing that the tongue and chin should be pulled forward.

3. Explain proper positioning of the inserted airway.

4. Ask a member of the class to discuss limitations on use of the airway and dangers in its use. Discuss his/her comments, emphasizing the following points:

   a. They should only be used if the rescuer is unable to maintain an open airway by proper positioning of the head and body.
   b. They should not be used on conscious patients.
   c. They may cause retching and vomiting in an unconscious patient.

Suction unit (manual for suction apparatus) (Time: 0:05)

1. Display and describe purpose and operation of suction unit.

2. Ask class to describe characteristics of a good suction unit and discuss answers given (i.e., equipment should have strong enough suction, tubing of adequate length and diameter, plastic or metal suction tip, portability).

3. Demonstrate operation of the suction unit on a mannikin.

4. Explain technique for suctioning the laryngectomee.

Oxygen equipment (manual for oxygen equipment) (Time: 0:10)

1. Show class typical oxygen equipment describing in detail its construction and use:

   a. Proper removal of protective cap.
   b. Technique of "cracking" the tank.
   c. Opening the tanks with reducing valve connected.
   d. Adjusting the flow meter.
   e. Connecting administrating apparatus to the flow meter.
   f. "Shutting down" the apparatus.

2. Describe safe practices in the use of oxygen equipment:

   a. Never use oils or grease near oxygen equipment.
   b. No smoking allowed near oxygen equipment since oxygen supports combustion.
   c. Tanks should be held securely in the apparatus.

3. Discuss the various sizes of masks and their uses.

4. Demonstrate administration of oxygen to a mannikin.

5. Ask a member of the class to give examples of when oxygen should be used. Discuss examples given, emphasizing that patients with breathing problems will usually benefit from additional oxygen, but that inhalation is not a substitute for resuscitation.

6. Ask a member of the class to describe what he/she would do if a conscious patient in need of oxygen resists the mask (i.e., full concentration of oxygen near the patient's nose will assist breathing if the victim fears the mask).

MECHANICAL AIDS TO PULMONARY RESUSCITATION

General (Time: 0:05)

1. Discuss with the class the superiority of direct oronasal methods of resuscitation and limitations of mechanical aids to breathing (i.e., they must be immediately available, they must be in operating condition, rescuer must not waste time obtaining them).

2. Emphasize that mechanical aids to pulmonary resuscitation have been developed to avoid direct contact between the patient and the rescuer, and that use of mechanical equipment does not improve on the direct oronasal method.

Two-way (S-shaped) airway

1. Describe purpose and use of various sizes of two-way airways.

2. Describe proper technique for inserting the airway, emphasizing that the tongue and chin should be pulled forward.

3. Explain proper positioning of the inserted airway and technique of resuscitating by the airway.

4. Emphasize that airways should not be used on conscious patients, and may cause vomiting in unconscious patients.

Bag-mask resuscitator (manual for bag-mask resuscitator) (Time: 0:10)

1. Show class a typical bag-mask resuscitator describing in detail its construction, use and varying mask sizes.

2. Demonstrate attachment of oxygen to the bag-mask unit.

3. Discuss and demonstrate on a mannikin procedures for obtaining a tight seal with the mask.

4. Demonstrate technique of pulmonary resuscitation on a member of the class using the bag-mask resuscitator. Emphasize the following points:

   a. Importance of an open airway.

b. Importance of a tight seal.
c. Importance of watching the patient for signs of vomiting and what to do should these signs be evident.

5. Briefly discuss with the class other types of mechanical resuscitators, their limitations and requirements for effective resuscitation. Emphasize reason why manually operating bag-mask units are preferred and why pressure cycled automatic ventilators should not be used.

TEN MINUTE BREAK

PRACTICE (Time: 1:00)

Note: If there are more than 10 students per instructor or per item of equipment, additional time will be required for practice.

1. Divide class into groups of 10.

2. Have each student practice (on a mannikin or other student, as appropriate) until he/she has demonstrated proficiency in:

   a. Use of suction units.
   b. Setting up, administering and shutting down oxygen apparatus.
   c. Resuscitation by the bag-mask unit.

SUMMARY OF LESSON (Time: 0:05)

1. Reassemble class.

2. Briefly summarize the lesson emphasizing the following points:

   a. Superiority of direct oronasal methods of resuscitation over mechanical aids.
   b. Limitations of airways (should not be attempted on conscious patients).
   c. Importance of proper operation and use of oxygen equipment.

LESSON VI (Time: 3:00)

FRACTURES

Objectives

Be able to explain

- Anatomy and physiology of the musculo-skeletal system.
- General concepts of fractures and dislocations.
- Types of splints and general rules for splinting.
- Signs and symptoms of fracture, dislocations and sprains.

Be able to demonstrate

- Immobilization and splinting of fractures and dislocations.

Requirements

- One instructor for each 10 students

Instructor References

- AAOS, Chapters 12-20.

Materials, Equipment

- Scale model of skeletal system or, preferably, an actual skeleton.
- Rigid splints (one set for every two students), wood, wire or cardboard.
- Triangular bandages (four for each student).
- Chalkboard with chalk and eraser.
- Pillow.
- Blanket.
- Inflatable splints (arm and leg) (one for each 10 students).
- Thomas traction splint (one for each 10 students).
- Cervical collar or universal dressing (two for each 10 students).
- Long and short (if used in area) backboard.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON

None

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to class the objectives of the lesson.

THE MUSCULO-SKELETAL SYSTEM (Time: 0:10)

1. Using a chart, scale model or actual skeleton, identify and briefly describe the parts and functions of:

   a. The skeleton as a whole.
   b. Joints including ligaments.
   c. Skull including cranium and face bones.
   d. Spinal column.
   e. Thoracic cage including sternum.
   f. Upper extremities including scapula, clavicle, humerus, ulna, radius, carpals, metacarpals and phalanges.
   g. Lower extremities including pelvis, femur, tibia, fibula, patella, tarsals, metatarsals and phalanges.

2. Identify briefly the purpose and functioning of:

   a. Muscles in general.
   b. Voluntary muscles including tendons.
   c. Involuntary muscles.
   d. Diaphragm.
   e. Cardiac muscle.

GENERAL CONCEPTS OF FRACTURES AND DISLOCATIONS (Time: 0:15)

1. Discuss the differences between a closed and open fracture, emphasizing the danger of infection associated with an open fracture.

2. Describe how various types of fractured bones appear (i.e., greenstick, transverse, oblique, spiral, comminuted, impacted).

3. Describe a hypothetical accident situation which could cause a fracture and ask class to describe how they would check for a fracture and what signs and symptoms might be present (i.e., deformity, pain, tenderness, grating, swelling, discoloration, loss of use, appearance of fragments).

4. Ask class what they would do if a patient with a fracture were unconscious.

5. Define a dislocation and identify signs and symptoms.

6. Discuss complications (associated with fractures and dislocations) resulting from the joint pressing on nerves or blood vessels.

7. Define a sprain and identify signs and symptoms pointing out the difficulty of differentiating between a sprain and a fracture.

8. Describe the complications caused by angulated fractures and techniques of caring for patients with angulated fractures.

GENERAL PRINCIPLES FOR CARE OF FRACTURES AND DISLOCATIONS (Time: 0:15)

1. Describe the general principles for caring for patients with fractures and dislocations, listing each on chalkboard in abbreviated form or have prepared flip chart:

   a. Immobilize before moving patient or apply traction.
   b. Do not straighten dislocations.
   c. If open fracture, stop bleeding and dress wound before splinting; do not push protruding bone back.
   d. Prevent shock.
   e. Immobilize broken bone and joints above and below break.
   f. Immobilize dislocated joint and bones above and below joint.
   g. Apply slight traction while splinting and maintain until splint is applied.
   h. Splint tightly but do not interfere with circulation.
   i. Suspect injury to neck or spine in any accident that could cause fracture or dislocation.

2. Ask class to identify why it is important to prevent motion of the bone ends and adjacent joints:

   a. Minimize damage to muscles, nerves and blood vessels.
   b. Prevent open fracture.
   c. Avoid pressure on blood vessels.
   d. Reduce bleeding.
   e. Reduce pain.

3. Define a splint and its general purpose.

4. Describe the difference between rigid and traction splints, displaying and identifying examples of each type, including pillows and blanket rolls.

5. Point out precautions in using inflatable splints (i.e., over-inflation; areas of the body where they may be used). Demonstrate application of inflatable splint.

6. Point out precautions in using traction splint (i.e., ankle hitch, half ring, amount of traction).

7. Discuss need to improvise for dislocations and what dislocation should <u>not</u> be straightened.

8. Explain the purpose of a sling and swathe in immobilizing fractures and dislocations.

FRACTURES OF PELVIS (Time: 0:10)

1. Describe the signs, symptoms, dangers and most common types of pelvic fractures and how to check for same.

2. Describe care of patient with pelvic fracture emphasizing:

   a. Immobilizing with backboard or stretcher.
   b. Flexing knees for comfort.
   c. Careful handling.
   d. Preventing shock.

FRACTURES AND DISLOCATIONS OF THE NECK AND SPINE (Time: 0:20)

1. Indicate that <u>primary</u> consideration in caring for patients with fractures of the neck and spine is to prevent damage to spinal cord which could cause paralysis or death.

2. Point out that in any accident which could cause a fracture or dislocation, suspect and look for a spinal fracture, particularly if the person is unconscious.

3. Describe and list on chalkboard the signs and symptoms of a spinal fracture and how to determine their significance:

   a. Pain--may not be present.
   b. Tenderness.
   c. Painful movement--do not encourage.
   d. Deformity of spine.
   e. Lacerations and contusions.
   f. Paralysis and numbness.

   For conscious victims: ASK, LOOK, FEEL, TOUCH, MOVE

   For unconscious victims: LOOK, FEEL, ASK OTHERS

4. List on chalkboard and describe general rules of care for a spinal injury:

   a. Restore the airway.
   b. Control serious bleeding.
   c. Splint before moving.
   d. Do not rush.

5. Emphasize importance of keeping the head, neck and body from bending or twisting during all phases of emergency care.

6. Ask member of class how he/she would maintain an open airway for pulmonary resuscitation if patient had a neck fracture.

7. Demonstrate technique for immobilizing a fractured neck. Indicate that techniques for moving patients with neck and spine injuries will be described in a later lesson.

8. Ask member of the class to identify complications associated with a broken neck or spinal cord injury (i.e., paralysis of chest muscles and neurogenic shock).

9. Describe causes, signs, symptoms and care of diaphragmatic breathing.

10. Describe signs, symptoms and care of neurogenic shock.

TEN MINUTE BREAK

FRACTURES AND DISLOCATIONS (Time: 0:30)

Note: In demonstrations of techniques for immobilizing fractures, instructor should use splints normally available in the area. Regardless of whether or not these splints are padded, instructor should explain procedures and necessity for padding splints so that students will understand basic principles.

1. Describe signs and symptoms of the various types of fractures of the upper extremities and demonstrate techniques for immobilization.

2. Describe types, signs and symptoms of dislocations of upper extremities and demonstrate methods for immobilization.

3. Describe signs and symptoms of the various types of fractures of the lower extremities and demonstrate techniques for immobilization.

4. Describe types, signs and symptoms of dislocations of lower extremities and demonstrate methods for immobilization.

PRACTICE (Time: 0:55)

Note: If there are more than 10 students per instructor or two students per set of splints, additional time will be required for practice.

1. Divide class into groups of 10.

2. Have class members work in pairs. Each student should practice immobilizing each of the following:

   Fractures:

   a. Humerus.
   b. Elbow.
   c. Forearm.
   d. Wrist.
   e. Finger.
   f. Femur.
   g. Lower leg.
   h. Ankle.
   g. Cervical spine.

   Dislocations: Shoulder.

SUMMARY OF LESSON (Time: 0:05)

1. Reassemble class.

2. Briefly summarize the lesson, emphasizing the following points:

   a. Why it is important to immobilize a fracture or dislocation.
   b. Signs and symptoms of a fracture.
   c. General rules for care of fractures and dislocations.

LESSON VII (Time: 2:25)

INJURIES OF THE HEAD AND NERVOUS SYSTEM

INJURIES OF THE ABDOMEN AND GENITOURINARY SYSTEM

Objectives

Be able to explain

- Anatomy and physiology of the nervous system, eye, abdomen, digestive system, genitourinary system.
- Signs of a skull fracture.
- Techniques of caring for the patient suffering from injuries to the skull and brain.
- Techniques of caring for the patient suffering from injuries to the head and face.
- Techniques of bandaging the skull, cheek, ear and jaw.
- Types of injuries to the eye, abdomen, pelvis and genitalia.
- Techniques of care for injuries of the eye, abdomen, pelvis and genitalia.
- Signs and significance of various wound types.
- Causes of danger of infection in open wounds.
- Basic care of wounds.
- Techniques of dressing and bandaging wounds.

Be able to demonstrate

- Dressing and bandaging of the eye with and without a protruding object.

Number of Instructors

One instructor for each 10 students.

Instructor References

- AAOS, Chapters 21-24, 25-29.

Materials, Equipment

- Dressings and roller bandages (one set per two students).
- Cup for dressing eye with protruding object (one per two students).
- Chalkboard with chalk and eraser.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON (Time: 0:10)

1. Summarize briefly the key points from previous lesson:

   a. Why it is important to immobilize a fracture or dislocation.
   b. Signs and symptoms of a fracture.
   c. General rules for care of fractures and dislocations.

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to the class the objectives of the lesson.

THE NERVOUS SYSTEM (Time: 0:10)

1. Identify the parts, locations and functions of the nervous system (i.e., brain, spinal cord, sensory nerves, motor nerves).

2. Briefly describe the protective coverings of the nervous system.

3. Identify the role of the skull and spinal column in protecting the brain and spinal cord.

INJURIES TO THE SKULL AND BRAIN (Time: 0:15)

1. Identify and describe types of skull fractures (i.e., linear, depressed and those caused by penetrating objects).

2. Indicate the frequency of skull and brain injuries in accident situations and potential dangers.

3. Describe signs of skull fractures (i.e., deformity, blood or fluid in ears and nose, black eyes).

4. Ask member of the class to identify general steps in caring for skull fractures (list on chalkboard):

   a. Maintain an airway.
   b. Control bleeding--not drainage
   c. Cover open wounds--little pressure.
   d. Prevent shock.
   e. Do not remove impaled object--cut off.
   f. Suspect brain damage and neck injury.

5. Demonstrate dressing and bandaging a skull fracture.

6. Repeat that in the case of head injuries, suspect and check for possible brain damage.

8. Ask class to describe how they would check for brain damage and evaluate their findings relative to such factors as consciousness, degree of responsiveness, pupils, etc.

9. Describe how to manage patients with brain injuries:

   a. Care for life-threatening emergencies; maintenance of adequate respiration most important.
   b. Splint neck injuries.
   c. Prevent shock.
   d. Position patient properly considering elevation of head and drainage of blood and vomitus.

INJURIES TO THE HEAD AND FACE (Time: 0:15)

1. Describe types of injuries likely to be found in the area of the head and face:

   a. Soft tissue injuries to the scalp, face and neck (i.e., abrasion, contusion, laceration, avulsion).
   b. Facial fractures (i.e., nose, eye socket, cheek bone, lower jaw).
   c. Injuries to the eye.
   d. Suspect and look for possible brain damage and neck fracture or dislocation.

2. Ask member of the class to identify primary considerations in care for patients suffering from injuries to head and face (i.e., control bleeding, keep airway open).

3. Describe how breathing may be affected in the case of head and face injuries.

4. Discuss care of patients with soft tissue wounds of the scalp, face and neck and facial fractures, emphasizing:

   a. Arresting bleeding externally and internally in mouth and nose and neck.
   b. Maintaining an open airway by removing obstructions, proper position and use of suction and oxygen.
   c. Positioning and immobilizing patient in case of accompanying skull or brain injury.
   d. Positioning and protecting avulsed parts.
   e. Removing, cutting off or leaving penetrating objects.
   f. Immobilizing lower jaw.

5. Demonstrate application of dressings and bandages to the following:

   a. Laceration of cheek.
   b. Avulsed ear.
   c. Fractured jaw.

INJURIES TO THE EYE (Time: 0:20)

1. Explain briefly the location, characteristics and functions of the following:

   a. Cornea.
   b. Sclera.
   c. Iris.
   d. Pupil.

2. Identify types of injuries to the eye (i.e., foreign bodies; chemical, heat and light burns; lacerations and contusions).

3. Discuss general signs of eye injuries (i.e., swollen or lacerated eyelids, bloodshot sclera, scratched cornea, blood beneath cornea, distorted pupil).

4. Discuss removal of small object from the eye explaining cautions regarding object on cornea and impaled objects.

5. Describe emergency care treatment for chemical burns to eye (i.e., irrigation).

6. Ask member of class to describe emergency care treatment for eyes exposed to extremes of heat or light (i.e., cover both eyes).

7. Demonstrate application of bandage for covering both eyes, emphasizing why both eyes are covered even though only one may be injured.

8. Describe the type and consequences of lacerations and contusions of the eye.

9. Describe emergency care treatment for lacerations and contusions of the eye, emphasizing:

   a. Arresting hemorrhage, except when eyeball is lacerated.
   b. Signs of lacerated eyeball.
   c. The care of torn eyelids.
   d. Dressing and bandaging lacerations with no protruding foreign object (see Item 7 above).
   e. Minimizing pressure.
   f. Suspecting brain damage and signs displayed by eyes.

10. Demonstrate dressing and bandaging eye with foreign object protruding.

11. Discuss types of medication used with various eye injuries.

12. Ask members of class what they would do if a patient was unconscious and his eyes remained open.

13. Alert class to the possibility of a glass eye or contact lenses.

TEN MINUTE BREAK

INJURIES TO THE ABDOMEN (Time: 0:20)

1. Explain briefly the location, characteristics and functions of the following:

   a. Mouth and salivary glands.
   b. Pharynx.
   c. Esophagus.
   d. Stomach.
   e. Small intestine.
   f. Large intestine.
   g. Liver.
   h. Gall bladder.
   i. Pancreas.
   j. Spleen.
   k. Kidneys.
   l. Ureters and urethra.
   m. Bladder.

n. Appendix.
o. Male reproductive organs.
p. Female reproductive organs.

2. Describe how to examine a patient for possible abdominal injuries:

a. STOP - have patient lie down with legs flexed.
b. LOOK - at patient as a whole; his position, for break in skin.
for bruises, contusions or abrasions.
for protruding organs.
for vomitus containing blood.
for painful breathing and "board-like" abdomen.
for impaled objects.
c. CHECK - pulse.
blood pressure.
respiration.
d. ASK - if abdomen hurts.
if nauseous.
if pain in top of shoulders near neck.
if pain when coughing.

3. Describe emergency care for patients with abdominal injuries emphasizing the following points:

a. Position--lying down with legs flexed.
b. No food, liquids or medication.
c. Cover protruding organs with wet dressing.
d. Arrest bleeding with pressure if no organs protrude.
e. Do not remove penetrating instruments.
f. Position head to expel vomitus.
g. Prevent shock.
h. Administer oxygen.
i. Transport, watching for vomiting and shock.

INJURIES TO GENITALIA (Time: 0:10)

1. Describe circumstances under which injuries to genitalia are likely to be found.

2. Describe care of injury to male genitalia:

a. Patient lying down.
b. Direct pressure on vein to stop bleeding.
c. Diaper type dressing and four-tailed bandage.
d. Protect and transport avulsed parts.
e. Transport patient lying down with ice packs, if available.

3. Describe care of injury to female genitalia:

   a. Patient lying down.
   b. Direct pressure to stop bleeding.
   c. Sanitary napkin for dressing and four-tailed bandage.
   d. Transport patient lying down with ice packs, if available.

4. Describe care in the case of impaled or inserted objects.

PRACTICE (Time: 0:20)

Note: The time frame assumes that there will be no more than 10 students per instructor and that the specified equipment will be available. If the number of students per instructor or equipment exceeds those specified, additional time will be required for practice.

1. Divide class into groups of 10.

2. Have class members work in pairs. Each student should practice application of a dressing and bandage for laceration of eyeball with protruding object.

SUMMARY OF LESSON (Time: 0:05)

1. Reassemble class

2. Briefly summarize the lesson, emphasizing the following points:

   a. Suspect and look for injuries to head, neck and back in accidents.
   b. Preventing damage to brain and spinal cord primary consideration in treating injuries to head, neck and back.
   c. Keep head, neck and back rigid during all phases of emergency care.
   d. For eye injuries bandage both eyes with minimum pressure and do not remove protruding objects.
   e. For injuries to abdomen, cover but do not attempt to replace protruding organs.

LESSON VIII (Time: 2:35)

MEDICAL EMERGENCIES

Objectives

Be able to explain causes, signs, symptoms and techniques of care of

- Diabetic patients.
- Patients suffering from acute abdominal problems.
- Patients with communicable diseases.
- Emotionally disturbed and unruly patients, including patients in a drug stupor or intoxicated.
- Epileptic patients.
- Unconscious patients.
- Poison victims.
- Victims of bites and stings.
- Heart attack patients.
- Stroke patients.
- Dyspnea.

Requirements

- One instructor for each 10 students.

Instructor References

- AAOS, Chapters 30-35, 38, 39, 45.
- Material Safety Data Sheet.*

Materials, Equipment

- Chalkboard with chalk and eraser.

* Available and filed in each U. S. Department of Labor Occupational Safety and Health Administration.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON

None

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to the class the objectives of the lesson.

POISONING (Ingested) (Time: 0:10)

1. Describe a few key signs and symptoms of a victim who has taken poison (i.e., cramps, nausea, slowing of respiration, drowsiness, stains around mouth) and ask a member of the class to discuss what is most likely wrong with the patient.

2. Describe the causes and consequences of ingested poisoning.

3. Ask class to identify possible signs or symptoms of poisoning and list on chalkboard.

   a. Drowsiness, deep sleep.
   b. Delirious.
   c. Convulsions.
   d. Unconsciousness.
   e. Abdominal pain or cramping.
   f. Vomiting or nausea.
   g. Diarrhea.
   h. Slowing or stopping of respiration.
   i. Absence of pulse or slowed rate of circulation.
   j. Remains of food, drinking glasses, bottles, containers.
   k. Odors or stains around mouth.

4. Material Safety Data Sheet - explain the content of this sheet and its use in identifying emergency care procedures.

5. Describe the general care and exceptions for patients who have ingested poisons:

   a. Induce vomiting as directed.

      Exceptions

      1. Person ingested acids, alkalis or petroleum product.
      2. Patient is unconscious, semi-conscious, convulsing, has convulsed, is pregnant or has severe heart disease.

   b. Administer antidote if and as prescribed.
   c. Prevent shock.
   d. Administer pulmonary resuscitation as required.
   e. Preserve evidence including vomitus if doubtful as to type of poison.
   f. Transport to hospital quickly.

6. Describe techniques for inducing vomiting and precautions.

   a. Syrup of Ipecac.
   b. Warm water and salt.

POISONOUS BITES AND STINGS (Time: 0:10)

1. Describe signs and symptoms of snake bites (i.e., burning pain, spreading edema, tiny spots of bleeding, signs of fang wounds, tingling of tongue and mouth, tingling about wound, perspiration, possible respiratory distress and signs of shock).

2. Ask a member of the class to describe emergency treatment for a snake bite, ensuring the following points are covered:

   a. Immobilization of affected part, victim at absolute rest.
   b. Identify snake; if possible, bring in snake.
   c. Application of constricting band; not tight enough to stop pulse; demonstrate.
   d. Longitudinal incisions through fang marks and suction within first few minutes after bite.
   e. Prompt transportation for anti-venom injection.

3. Describe signs and symptoms resulting from poisons being injected by insect bites or stings (i.e., unconsciousness, vomiting, pain, tenderness at injection site, swelling, muscle rigidity, abdominal spasm).

4. Ask member of the class to describe emergency care for poisonous bites or stings:

   a. Remove rings, watches, bracelets.
   b. Constricting band for extremities.
   c. Medications used.
   d. Cardiopulmonary resuscitation as required.
   e. Transport immediately.

5. Describe emergency procedures for animal bites:

   a. Wash thoroughly.
   b. Dress and bandage wound.
   c. Notify police.
   d. In the absence of police, advise responsible parties of importance of holding animal for observation.

HEART ATTACK (Time: 0:15)

1. Describe signs and symptoms of a typical heart attack patient and ask member of the class to suggest what is wrong with the patient; discuss signs and symptoms including the following:

   a. Pain--type and location.
   b. Shortness of breath.
   c. Apprehension.
   d. Cyanosis.
   e. Nausea and vomiting.
   f. Sweating.
   g. Swelling of hands, feet and ankles.

2. Describe emergency care for a heart attack patient emphasizing:

   a. Maintaining airway.
   b. Positioning of body for comfort, preferably sitting.
   c. Administration of oxygen in every case.
   d. Not allowing patient to assist in moving himself.
   e. The need for comfort and reassurance.
   f. The possible need for cardiopulmonary resuscitation.
   g. If requested, assist in administration of nitro-glycerine.
   h. Care during loading and transport.

3. Describe emergency medications and indications for IV's per standing orders.

STROKE (Time: 0:10)

1. Describe symptoms of a stroke patient and ask a member of the class to suggest what is wrong with the patient; discuss symptoms including the following:

   a. Numbness and/or paralysis of the extremities on one or both sides of the body.
   b. Difficulty in speaking and swallowing.
   c. Confusion, dizziness, unconsciousness, convulsions or coma.
   d. Loss of bladder and bowel control.

2. Describe care of stroke patients emphasizing:

   a. Maintenance of airway.
   b. Positioning of body for comfort.
   c. Calmness, reassurance and careful handling.
   d. Administration of oxygen if it does not upset patient.
   e. Monitoring of vital signs and neuro-vital signs until transport--stress importance of careful recording of vital signs.
   f. Protection of paralyzed extremities.
   g. No fluids or solids.
   h. Placement of patient on side if choking or unconscious.
   i. Care during loading and transport.

DYSPNEA (Time: 0:15)

1. Define dyspnea; discuss causes and types.

2. Describe signs and symptoms of individual having an acute <u>asthmatic attack</u>. Discuss symptoms including the following:

   a. Difficult breathing.
   b. Wheezing on expiration.
   c. Coughing.
   d. Apprehensiveness.
   e. Air hunger.

3. Briefly describe cause and consequences of <u>asthma</u>:

   a. Caused by allergies and infections.
   b. Bronchi go into spasm and become smaller.
   c. Air flow in unrestricted; outflow restricted.

4. Describe how to manage a patient undergoing an acute asthma attack emphasizing the following:

   a. Ask patient what works best for him.
   b. Place in sitting or semi-sitting position.
   c. Assist patient in taking any prescribed medication.
   d. Try oxygen but observe reaction, particularly if person has emphysema.
   e. Encourage him to drink water.
   f. Reassure and comfort him.
   g. Transport him to hospital while accomplishing the preceding.

5. Briefly describe the causes, consequences and symptoms of spontaneous pneumothorax and indicate that only treatment is immediate transport to hospital; do not use mechanical breathing equipment.

6. Describe the causes, consequences and symptoms of chronic and traumatic emphysema and indicate how to care for such cases.

7. Discuss briefly allergic reactions (i.e., anaphylactic shock), including medications and administration per standing orders.

TEN MINUTE BREAK

DIABETES (Time: 0:10)

1. Explain briefly the process by which the body handles blood sugar and what happens in the case of diabetes:

   a. Body cells need sugar--sugar in the blood.
   b. Insulin permits sugar to pass from blood to body cells.
   c. Inadequate insulin--blood sugar increases--cells starved.
   d. Too much insulin--blood sugar decreases--brain starved.

   Diabetes usually caused by inadequate insulin, corrected by diet, pills or injections.

2. Ask a member of the class to differentiate between the causes of diabetic coma and insulin shock:

   a. Diabetic coma
      1) Inadequate insulin--blood sugar up--cell sugar down.
      2) Not taken insulin--overeating--infection.

   b. Insulin shock
      1) Too much insulin--blood sugar down--cell sugar up--brain starved.
      2) Taken too much insulin--not eating--excessive exercise.

3. Describe the signs and symptoms of diabetic coma and insulin shock, indicating that it is sometimes difficult to differentiate between diabetic coma and insulin shock.

4. Point out that a diabetic usually carries some special identification which will confirm the fact that he is a diabetic.

5. Describe the care for diabetic coma (i.e., transport to hospital) and insulin shock (i.e., administer sugar to conscious and unconscious patient, via appropriate route p.o. or IV, and transport to hospital).

6. Indicate that if in doubt whether patient is conscious or unconscious, administer sugar and transport to hospital; explain why.

ACUTE ABDOMEN (Time: 0:10)

1. Define for the class "acute abdomen" and identify some of the possible causes.

   a. Abdominal pain and tenderness--local or diffuse.
   b. Reluctance to move.
   c. Rapid shallow breathing.
   d. Rapid pulse.
   e. Low blood pressure.
   f. Abdominal distention.
   g. Nausea or vomiting; possibly diarrhea.
   h. Possible shock.
   i. Position in bed.
   j. Pulse and blood pressure; possibly altered.

3. Indicate that signs and symptoms and their degree will vary depending upon the cause, but nurse need not diagnose cause since care provided by nurse is generally the same.

4. Describe general care of a patient with an acute abdomen emphasizing:

   a. Transport to hospital immediately.
   b. Keep airway clear of vomitus.
   c. Administer oxygen as necessary.
   d. No liquids or food.
   e. No medication.
   f. Record signs and symptoms including pulse and blood pressure.
   g. Prevent shock.
   h. Position patient comfortably.

COMMUNICABLE DISEASES (Time: 0:10)

1. Identify the most common communicable diseases likely to be encountered by emergency care personnel.

2. Describe precautions to be taken when handling known communicable diseases:

   a. If nature of call is known in advance:
      1) Wear masks and smocks if available.
      2) Use as much disposable equipment as possible.
      3) Limit exposure to equipment, plant areas and other employees.

   b. Upon return:
      1) Place clothes and linen in container for special handling using rubber gloves to handle linen.
      2) Shower
      3) If exposed to:
         a) Small pox - revaccination.
         b) Diptheria - Schick test.
         c) Meningitis - Check with physician.
         d) Syphilis - Check with physician if bitten or scratched.

3. Identify any additional procedures required by state laws or local ordinances.

TEN-MINUTE BREAK

THE EMOTIONALLY DISTURBED PERSON (Time: 0:15)

1. Identify some of the causes of abnormal behavior:

   a. Emotional shock.
   b. Diseases (i.e., diabetes, high blood pressure, epilepsy, sever infections or fever, etc.)
   c. Alcohol.
   d. Drugs.
   e. Mental disorders.

2. Briefly describe some of the characteristics exhibited by emotionally disturbed people:

   a. Persons around scene of accident may be hysterical due to emotional shock.
   b. Persons with mental disorders may be violent, agitated, threatening or they may be depressed or sad.
   c. Persons under the influence of alcohol may be unruly, delirious, have hallucinations and tremors.
   d. Persons undergoing withdrawal from drugs may be depressed, nervous, antagonistic.

3. Describe the local ordinances relating to the handling of emotionally disturbed persons, emphasizing the importance of obtaining police assistance if in doubt.

4. Describe general management of emotionally disturbed persons indicating there are no specific rules since each situation is different:

   a. Evaluate the situation considering causes and possible dangers.
   b. Display an attitude of sincerity, calmness, confidence and willingness to help.
   c. Reassure, calm and encourage patient.
   d. Don't be in a hurry, give patient time to quiet down.
   e. Be honest.
   f. Don't use force.
   g. Use restraints only if necessary and under orders from physician or law enforcement officer; be careful not to injure person.
   h. If patient is female, have another female ride in ambulance.

5. Describe the special considerations associated with alcohol (i.e., masking, respirations, DT's).

6. Describe special considerations associated with drugs:

   a. Types of drugs and their effects.
   b. Signs of users (i.e., needle marks, needles, capsules, syringes).
   c. Signs of acute drug poisoning.
   d. Signs of withdrawal.
   e. Management and care of drug users and acute drug poisoning.

7. Discuss the procedure and precautions associated with the use of restraints.

8. Discuss local resources and referral procedures for emotional-abuse problems (i.e., mental health centers, hospital facilities, etc.)

EPILEPSY AND CONVULSIONS (Time: 0:10)

1. Describe what epilepsy is, its causes and the characteristics of a petit-mal and grand-mal seizure, emphasizing that in a grand-mal seizure, the individual:

   a. May seem to have an airway obstruction and become cyanotic.
   b. May bite his tongue.
   c. May hurt himself because of violent jerky movements.

2. Decide how to manage a person undergoing a grand-mal seizure, making certain that the following points are covered:

   a. Difficulty in breathing usually not serious problem.
   b. Prevent person from biting tongue.
   c. Loosen clothing.
   d. Protect person from injury by guiding or controlling movements, do not restrain.
   e. Do not question or embarrass him.
   f. Protect him from onlookers.
   g. Encourage him to rest after seizure.

THE UNCONSCIOUS STATE (Time: 0:10)

1. Describe what unconsciousness is, the fact that it can be brief (fainting) or prolonged (coma), the common causes and the difficulty sometimes of determining the cause.

2. Review briefly the conditions, symptoms and management of red, white, and blue unconsciousness, emphasizing the general measures taken in all cases of unconsciousness:

   a. Maintaining an open airway through proper positioning; possibly pulmonary or cardiopulmonary resuscitation.
   b. Not moving the patient unnecessarily, keeping him lying down on his side.
   c. Never giving anything by mouth.

LESSON IX (Time: 1:30)

CHILDBIRTH

Objectives

Be able to explain

- Parts of the female anatomy involved in childbirth.
- Parts developing during pregnancy.
- Obstetrical terms and their meaning.
- Equipment and supplies used during emergency childbirth.
- Emergency care procedures for various phases and conditions associated with pregnancy and childbirth.
- Delivery and care of baby during normal and abnormal births.
- Clamping and cutting umbilical cord.
- Use of special carrier for premature babies.
- Resuscitation of infant.

Requirements

Number of Instructors

- One instructor for each 10 students.

Instructor References

- AAOS, Chapter 36.

Materials, Equipment

- Emergency delivery pack.
- Chalkboard with chalk and eraser.

Films

- Emergency Childbirth.
- Sound projector and screen.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON

None

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to class the objectives of the lesson.

RELEVANT ANATOMY, PHYSIOLOGY, TERMS AND EQUIPMENT (Time: 0:10)

1. Briefly define the following:

   a. Ovary.
   b. Fallopian tube.
   c. Uterus or womb.
   d. Cervix.
   e. Vaginal or birth canal.
   f. Perineum.
   g. Fetus.
   h. Umbilical cord.
   i. Placenta
   j. Amnionic sac.
   k. Labor--first, second and third stage.
   l. Bloody show.
   m. Crowning.
   n. Presenting part.
   o. Breech delivery.
   p. Prolapsed cord.
   q. Premature delivery.
   r. Abortion or miscarriage.

2. Display and describe contents of an emergency delivery pack:

   a. Surgical scissors.
   b. Hermostat clamps.
   c. Umbilical tape or sterilized cord.
   d. Ear syringe.
   e. Towels.
   f. Gauze sponges.
   g. Rubber gloves.
   h. Baby blanket.

i. Sanitary napkins.
j. Plastic bags.

INITIAL CONSIDERATIONS (Time: 0:05)

1. Ask a member of the class to identify first decision to be made in an emergency childbirth case (transport or not to transport) and the considerations involved in making the right decision (i.e., number of deliveries, straining, crowning).

2. Identify precautions associated with transport decision:

   a. Look, don't touch.
   b. Do not let mother go to toilet.
   c. Do not hold mother's legs together to delay delivery.
   d. Rarely are first babies emergencies.
   e. Do not transport if evidence of crowning.

DELIVERY OF THE BABY

1. Show film "Emergency Childbirth" (Time: 0:30)

2. Resuscitation of the newborn (Time: 0:10)

   a. Suction airway.
   b. Lay baby on side, head lower than body.
   c. Snap index finger against bottom of feet; if no response--
   d. Apply gentle mouth-to-mouth/nose resuscitation.
   e. Continue resuscitation until breathing starts; then oxygen.
   f. Apply cardiopulmonary resuscitation if no pulse after two minutes.
   g. Continue cardiopulmonary resuscitation until baby breathes or is pronounced dead.

3. Discuss briefly procedures for care in abnormal deliveries (Time: 0:15)

   a. Breech delivery
      1) Make same preparations as for normal delivery.
      2) Allow buttocks and trunk to deliver spontaneously.
      3) Support legs and trunk.
      4) Allow head to deliver spontaneously.
      5) If head does not deliver in three minutes, create air passage by inserting index and 2nd finger in vaginal canal, separate fingers around nose and push away from nose.

6) Maintain airway until head is delivered.
7) Do not allow head to be delivered forcefully and do not pull baby out.
8) After head delivers, continue as in normal birth.
9) If head does not deliver in three minutes, maintain airway and transport.
10) If only foot or arm protrudes, transport to hospital immediately.

b. Prolapsed cord.
1) Put mother in shock position--legs elevated, give oxygen, keep mother warm.
2) With sterile gloved hand, push baby's head up into vagina three to four inches.
3) Do not replace or put pressure on cord.
4) Transport immediately while maintaining pressure on baby's head.

c. Excessive bleeding (1/2 to 1 cup of blood)
1) Prevent shock.
2) Place sterile sanitary napkin at opening of vagina.
3) Do not hold legs together or put hand or anything in vagina.
4) Preserve any tissue passed.
5) Administer oxygen.
6) Massage lower abdomen if waiting for placenta.
7) Transport immediately.

4. Describe the characteristics of a premature infant, how to check for same and the care involved, emphasizing:

a. Warmth.
b. Keeping the mouth and throat clear of fluid and mucus.
c. Ensuring cord does not bleed.
d. Administration of oxygen; demonstrate.
e. The danger of infection.
f. Alert hospital.

5. Discuss the use of carriers for premature infants.

a. Fill hot water bottles, cover and place in carrier.
b. Upon arrival, wash hands in alcohol.
c. Remove mucus from mouth and throat of infant.
d. Wrap infant in blanket or napkin.
e. Place infant in carrier.
f. Start oxygen (before infant is placed in carrier).
g. Be sure top of carrier and carrier is secure.
h. Alert and transport to hospital with member of family.

6. Discuss signs and symptoms of abortion or miscarriage and emergency care.

7. Ask members of the class to identify pre-delivery emergencies likely to be encountered (convulsions, heart disease, accident) and the prescribed care for each situation.

LESSON X (Time: 1:45)

ENVIRONMENTAL EMERGENCIES

Objectives

Be able to explain

- Estimation of severity of burn.
- Techniques of care for the burned patient.
- Special dangers of different types of burns--heat, chemical, electrical, radiation.
- Signs, symptoms and techniques of care for the patient suffering from heat cramps, heat exhaustion, heat stroke and frostbite.
- Major dangers of explosions.

Requirements

Number of Instructors

- One instructor.

Instructor References

- AAOS, Chapters 40-43.
- Material Safety Data Sheet.

Materials, Equipment

- Chalkboard with chalk and eraser.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON

None

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to the class the objectives of the lesson.

BURNS (Time 0:15)

1. Indicate the four causes of burns and that initial emergency care will vary somewhat with cause and severity of burn:

   a. Heat.
   b. Chemicals.
   c. Electricity.
   d. Radiation.

Heat Burns

1. Describe first, second and third degree burns pointing out distinguishing signs.

2. Explain the "rule of nines" indicating variations for adults and children.

3. Emphasize that the seriousness of a burn is determined by:

   a. Degree of the burn.
   b. Amount of the body burned.
   c. Part of the body burned.
   d. Age of the patient.

4. Applying the "rule of nines", ask different members of the class to tell whether the following burns would be critical:

   a. Second degree burns of the chest, abdomen and both arms.
   b. Third degree burns of the face.
   c. Third degree burns of the left arm excluding the hand.
   d. Third degree burns of the left leg excluding the foot.

5. Emphasize that any burns complicated by respiratory tract injury, major soft tissue injury and fractures must be considered critical.

6. Point out that children and the elderly are more suspectible and that if they sustain second degree burns of more than 14% of the body they should be considered critical.

7. Discuss with the class the basic care of minor burns.

8. Discuss with the class the basic care of serious burns:

   a. Relieve pain--use clean, cold applications if available.
   b. Prevent contamination--clean covering.
   c. Care for any complications that might arise from severe burns:
      1) Prevent shock.
      2) Maintain airway.
   d. Transport immediately.

Chemical Burns (Time: 0:10)

1. Discuss with the class the types of chemical burns and the seriousness of each:

   a. Acids.
   b. Alkalis.

2. Emphasize that the basic care of chemical burns is copius irrigation since chemicals continue to burn as long as they are in contact with the body (note exception for lime).

3. Explain referral to Material Safety Data Sheet for care instructions.

4. Ask a member of the class to indicate how he/she would care for a patient with chemical burns once the burned area had been sufficiently irrigated (i.e., cover with sterile sheet and transport to medical facility).

Electrical Burns (Time: 0:15)

1. Discuss with the class the dangers of electricity, even low voltage, emphasizing that although removal of a patient from an electric source should be accomplished only by trained personnel, the nurse should have an appreciation for the dangers of electricity and the proper procedures to follow in dealing with a situation involving electricity.

2. Describe a situational example in which wires have fallen on the floor in the plant and explain the following:

a. Role of the nurse (i.e., encourage victim to remain still, call for qualified help, keep the crowd back from the danger zone).
b. The danger zone and factors determing size.
c. Procedures followed by trained electrical workers.

3. Ask a member of the class what, aside from burns, is the basic danger to a human being from electricity and how to care for the patient.

4. Describe electrical burns emphasizing that they extend deep into the body and will have a point of entrance and exit.

5. Discuss emergency care for electrical burns.

Radiation Burns (Time: 0:15)

1. Indicate that there are two types of radiation burns, nuclear and solar. Since solar burns are basically sunburns, they should be treated as any other first or second degree burn. The remainder of the session will therefore be devoted to nuclear burns.

2. Explain that radiation is a form of energy.

3. Describe the dangers of alpha, beta and gamma rays to the human body.

4. Explain how radiation affects the body cells and what is meant by radiation sickness.

5. Emphasize that the degree of radiation sickness depends on the type of radiation and part of the body exposed.

6. Ask a member of the class to explain how he/she could control his/her exposure to radiation. Critique his/her comments emphasizing the following points:

a. Duration of exposure.
b. Amount of body exposed.
c. Distance between body and source of radiation.
d. Shielding between body and source of radiation.

7. Explain the special dangers involved when radioactive material is inhaled or swallowed and special precautions to follow around radioactive materials to avoid inhaling or swallowing them.

8. Describe the Interstate Commerce Commission regulations regarding shipping of radioactive materials.

9. Describe labelings commonly found on containers of radioactive materials and sometimes on vehicles transporting radioactive materials.

10. Explain the use of a Geiger counter in detecting gamma rays.

11. Explain that, if a hazardous radiation level exists, the patient should be removed from the area as quickly as possible even if some of the rules of initial emergency care are violated.

12. Explain procedures to follow if there is reason to suspect that there are radioactive materials on the patient's or rescuer's clothes.

13. Explain procedures for decontaminating oneself, one's clothing and equipment if exposed to radioactive materials.

14. Explain that, when radiation injury and burn injury occur in the same victim, each tends to make the other worse so that a 20% second degree burn might fall into the severe category if there were significant radiation.

TEN MINUTE BREAK

HEAT EXPOSURE (Time: 0:10)

1. Explain the function of the sweating mechanism in ridding the body of excess heat.

2. Identify the three separate illnesses caused by heat exposure:

   a. Heat cramps.
   b. Heat exhaustion.
   c. Heat stroke.

3. Ask a member of the class to describe the signs, symptoms and emergency care for a patient suffering from heat cramps.

4. Ask a member of the class to describe the signs, symptoms and emergency care for a patient suffering from heat exhaustion. Critique his/her comments emphasizing that the signs are the same as for many other problems.

5. Ask a member of the class to explain the signs, symptoms and cause of heat stroke (i.e., exceedingly high temperature and dry skin caused by a breakdown in the sweating mechanism).

6. Describe emergency care for a patient suffering from heat stroke emphasizing that heat stroke is a real emergency and that the body must be cooled immediately.

COLD EXPOSURE (Time: 0:05)

1. Describe the two major effects of cold on the body and the various degrees of consequences:

   a. General cooling of the body--shivering, apathy, unconsciousness, freezing of extremities, death.
   b. Local cooling of the body--frost nip, superficial frostbite, deep frostbite.

2. Describe other conditions resulting from cold exposure (i.e., chilblains, trench foot and immersion foot and the emergency care measures for each).

3. Ask member of the class to identify factors which determine degree of injury associated with cold exposure (i.e., length of exposure, temperature, wind and amount of protection).

4. Discuss the signs, symptoms and care for cold exposure resulting in general cooling of the body; emphasize the acuteness of the emergency and the importance of the patient not smoking.

5. Describe the signs, symptoms and care of frostbite, cautioning against rubbing, manipulating or applying snow or cold water to affected parts. Point out the need to transport a victim of frostbite on a stretcher after the limb has thawed.

EXPLOSIONS (Time: 0:10)

1. Briefly explain the two types of pressure occurring in explosions.

2. Ask a member of the class to discuss typical injuries resulting from explosions. Critique his/her comments emphasizing that in addition to obvious injuries the rescuer should suspect internal injuries.

3. Emphasize the need for extreme gentleness in handling patients because of the danger of internal damage as well as the importance of self-protection for the rescuer in dealing with explosion situations.

SUMMARY OF LESSONS (Time: 0:05)

1. Briefly summarize the lesson emphasizing the following points:

   a. The seriousness of a burn is determined by the degree of the burn, the amount of the body burned and the part of the body burned.
   b. Only properly trained individuals should attempt to rescue an individual from an electrical hazard.
   c. Importance of care in handling patients exposed to radiation and special decontamination procedures.

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d. Signs and symptoms of heat exposure and special dangers of heat stroke.
e. Rescuer should suspect internal hemorrhage in explosion situations.

LESSON XI (Time: 1:35)

PATIENT HANDLING

Objectives

Be able to explain

- Principles of moving and positioning patients for transportation.
- Techniques of moving patients from a bed- or floor-height surface to a stretcher.
- Techniques of moving patients with suspected spinal injuries and immobilizing them on a backboard.
- Techniques of moving stretchers around narrow corners and down stairways.

Be able to demonstrate

- Three or four-man lifts from a bed- or floor-height surface to a stretcher.
- Immobilizing patients with spinal injuries on backboards.

Requirements

Number of Instructors

- One instructor for each 10 students.

Instructor References

- AAOS, Chapter 47.

Materials, Equipment

- Wheeled stretcher.
- Pole stretcher.
- Stair chair (if available).
- Folding stretcher (if available).
- Long backboard with two 9-foot straps (2 for each 10 students).
- Blankets (4 for each 10 students).
- Cervical collar or universal dressing (2 for each 10 students).
- Chalkboard with chalk and eraser.

ADMINISTRATIVE MATTERS (Time: 0:05)

1. Take attendance.

2. Make announcements.

REVIEW OF PREVIOUS LESSON

None

LESSON OBJECTIVES (Time: 0:05)

1. Briefly explain to the class the objectives of the lesson.

GENERAL PRINCIPLES OF MOVING AND POSITIONING PATIENTS (Time: 0:15)

1. Briefly review with the class the general principles involved in moving patients.

   a. Patient care should precede movement except in those instances where delayed movement would imperil the life of the patient or rescuer, such as:
      1) Noxious gases present.
      2) Danger of fire.
      3) Danger of explosion.
      4) Danger of collapse of structure.
   b. Importance of moving all patients carefully to minimize danger of further injury or aggravation of existing injuries or illnesses.
   c. Importance of suspecting spinal injuries in trauma cases, particularly unconscious patients, and the necessity to maintain in-line traction to minimize further damage to the patient.
   d. Importance of explaining to a conscious patient what you plan to do before moving him.

2. Explain positioning of patients with suspected cervical or thoracic spine injuries:

   a. Cervical spine injury--preferably face up, head and neck immobilized, rolled towel beneath neck.
   b. Thoracic spine injury--on abdomen is preferable but should be maintained in position found; if on back must provide support beneath curve of spine.

3. Ask a member of the class to describe the position advised for transporting unconscious patients and to explain the reason for the position.

4. Ask a member of the class to suggest illnesses for which a patient might be more comfortable in a semi-sitting position, such as:

   a. Heart attack.
   b. Stroke.
   c. Asthmatic attack.

5. Emphasize that conscious patients should be allowed to be transported in the position that is most comfortable to them. Again, emphasize the importance of reassuring the patient and telling him what you plan to do.

STRETCHERS (Time: 0:20)

1. Describe and demonstrate operation of:

   a. Wheeled stretcher.
   b. Pole stretcher.

2. Describe the operation and use of the following equipment (demonstrate equipment if available):

   a. Scoop stretcher.
   b. Stair chair.
   c. Long backboard.
   d. Folding stretcher.
   e. Stokes basket.

3. Explain technique of carrying stretcher.

4. Explain dangers to the nurse (i.e., back problems, hernia problems) if lifts and carries are not performed correctly.

5. Demonstrate techniques for manipulating stretchers in narrow hallways, around corners and down stairs. Emphasize importance of securing the patient in the stretcher so that he cannot fall out.

THREE- OR FOUR-MAN LIFTS FROM BED- OR FLOOR-HEIGHT SURFACE TO STRETCHER (Time: 0:10)

1. Using members of the class as patient and assistant, demonstrate moving a supine patient from a bed-height surface to a stretcher by three or four men, emphasizing the importance of positioning and orienting stretcher to minimize distance patient is moved.

2. Demonstrate technique for moving a patient from a floor-height surface to a stretcher.

3. Emphasize that these lifts do provide adequate support for fractured backs or necks while making short distance transfers from bed or floor to ambulance cot or from cot to bed.

IMMOBILIZATION ON THE BACKBOARD (Time: 0:20)

1. Using members of the class as patient and assistant, demonstrate technique for moving a patient with a suspected spine injury and immobilizing him on a backboard.

TEN MINUTE BREAK

PRACTICE (Time: 0:30)

Note: The time frame assumes that there will be no more than 10 students per instructor and that the equipment specified will be available. If there are more than 10 students per instructor or less equipment than that specified, additional time will be required for practice.

1. Divide class into groups of 10.

2. Have class members work in groups of five (one serving as patient) and have each group practice moving patient from floor onto stretcher. Include immobilization of neck and securing patient on backboard.

APPENDICES

APPENDIX A

Suggested Class Schedule

Class # 1 . . . Lesson I
(1:50)

Class # 2 . . . Lesson II
(2:20)

Class # 3 . . . Lesson III
(2:25)

Class # 4 . . . Lesson IV
(3:00)

Class # 5 . . . Lesson V
(2:10)

Class # 6 . . . Lesson VI
(3:00)

Class # 7 . . . Lesson VII
(2:25)

Class # 8 . . . Lesson VIII
(2:35)

Class # 9 . . . Lesson IX and X
(1:30) (1:45)

Class #10 . . . Lesson XI
(1:35)

Class #11 . . . Final Written Examination

Class #12 . . . Final Practical Examination

Note: Time listed for each class represents actual time value of lesson to be covered. Effort should be made to limit all classes to no more than three hours. Throughout the course, class time can be extended up to three hours, with the additional time used for practice sessions as necessary for nurses.

APPENDIX B

Lesson Titles and Reading Assignments

Lesson	I.	Introduction, Review, Medico-Legal Aspects, Record Keeping; AAOS* Chapters 2, 3, 4, 50.
Lesson	II.	Injuries to Chest, Airway Obstruction, Bleeding and Control of Bleeding; AAOS* Chapters 5, 6, 7, 8, 10 pp 89-93; The Laryngectomee.
Lesson	III.	Shock; AAOS* Chapter 9.
Lesson	IV.	Basic Life Support, AAOS* Chapter 10.
Lesson	V.	Oxygen Therapy and Equipment; AAOS* Chapter 11.
Lesson	VI.	Fractures; AAOS* Chapters 12-20.
Lesson	VII.	Injuries of the Head and Nervous System, Injuries of the Abdomen and Genitourinary System; AAOS* Chapters 21-24, 25-29.
Lesson	VIII.	Medical Emergencies; AAOS* Chapters 30-35, 38, 39, 45; Material Safety Data Sheet.
Lesson	IX.	Childbirth; AAOS* Chapter 36.
Lesson	X.	Environmental Emergencies; AAOS* Chapters 40-43; Material Safety Data Sheet.
Lesson	XI.	Patient Handling; AAOS* Chapter 47.

*Emergency Care and Transportation of the Sick and Injured, Second Edition, American Academy of Orthopaedic Surgeons, 1977.

APPENDIX C

Instructor Reference List

Emergency Care and Transportation of the Sick and Injured, Second Edition, American Academy of Orthopaedic Surgeons, 1977.

Standard First Aid and Personal Safety, Second Edition, American National Red Cross, 1979, pp. 71-72.

The Laryngectomee (handout). See appendix D.

American Heart Association Cardiopulmonary Resuscitation Manual for Instructors.

Manuals for equipment: bag-mask resuscitator, oxygen equipment, suction apparatus (furnished by provider of equipment for practice session).

Material Safety Data Sheet, U.S. Department of Labor, OSHA (handout).

"Occupational Safety and Health Standards," Federal Register. Volume 37, Part II, U.S. Department of Labor, Subpart K 1910.151, pp. 22242.

Audiovisual aids may be used according to locally available materials relating to lesson text.

New editions of textbooks and other educational materials may be used if related to and supportive of the lesson text.

APPENDIX D

THE LARYNGECTOMEE

Objectives

1. To learn to identify the laryngectomee and give immediate and appropriate care.

2. To learn to provide more efficient and extensive emergency care.

Outline of Instruction

A. Meaning of laryngectomee.

B. Meaning of tracheotomee.
   Include 1. Anatomical Cricothyroidotomy - technique or insertion of large Gauge Needle to bypass obstruction.
   2. Insertion of "S" tubes and oropharyngeal tubes.
   3. Suctioning Techniques.
      (a) Bulb syringe.
      (b) Foot operated.
      (c) Portable electric.

C. Importance of recognizing this medical problem.

D. Review of Airways.

   1. Closed.

      (a) Causes.
      (b) Danger.
      (c) Symptoms.

   2. Creation of for unborn baby.

   3. Open.

      (a) Importance.
      (b) Manuevers to Ensure.
      (c) Use of Suction.

E. Remaining alert for protective or cosmetic concealment of the neck opening.

F. First aid for the conscious neck breather.

   1. Be self-confident.
   2. Keep airway open by suctioning.
   3. Transport patient in sitting position if possible.
   4. DO NOT encourage coughing.

G. First Aid for the Unconscious Laryngectomee.

1. Aspirate, if necessary (always suction the unconscious).
2. Mouth to stoma resuscitation.
3. Use resuscitator or endotracheal tube if needed - over stoma.

H. Oxygen Administration

1. Proper removal of protective cap.
2. Proper opening of tank.
3. Correct adjustment of flow meter.
4. Correct connection of administrating apparatus to the flow meter.
5. Proper "shut down" of the apparatus.
6. Refrain from smoking near oxygen equipment.
7. Describe what type of administering apparatus to use for different circumstances.

APPENDIX E

OSHA REQUIREMENTS FOR OCCUPATIONAL HEALTH MEDICAL FACILITIES

NORTH CAROLINA DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH DIVISION
RALEIGH, NORTH CAROLINA

STANDARDS NOTICE 6

TO: All OSHA Consultants, Supervisors, and Safety Officers

SUBJECT: 29 CFR 1910.151 (b)

The above standard states:

In the absense of an infirmary, clinic, or hospital in near proximity to the workplace which is used for treatment of all injured employees, a person or persons shall be adequately trained to render first aid. First aid supplies approved by the consulting physician shall be readily available.

1. No person must be trained to administer first aid to be in compliance with this standard when the establishment is located within fifteen minutes travel to an infirmary, clinic, hospital or doctor's office. Fifteen minutes travel time or less will be construed as being in near proximity.

2. This standard will be cited when employers do not have sufficient approved first aid supplies regardless of the travel distance to an infirmary, clinic, hospital or doctor's office off the inspection site.

Lubin H. Mitchell
Chief, OSHA Inspections

Note:
By law, nurses are not required in occupational settings. The law recognizes that nurses are present in some locations and specifies requirements for care in the absence of a nurse.

APPENDIX F

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
ADDRESS *(Number, Street, City, State, and ZIP Code)*	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
CHEMICAL FAMILY	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H_2O=1)	
VAPOR PRESSURE (mm Hg.)		PERCENT, VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____=1)	
SOLUBILITY IN WATER			
APPEARANCE AND ODOR			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA			
SPECIAL FIRE FIGHTING PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS			

(Continued on reverse side)

Form OSHA-20
Rev. May 72

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

EMERGENCY AND FIRST AID PROCEDURES

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE		

INCOMPATABILITY *(Materials to avoid)*

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR		

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

WASTE DISPOSAL METHOD

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL *(General)*	OTHER

PROTECTIVE GLOVES	EYE PROTECTION

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OTHER PRECAUTIONS

APPENDIX G

EMERGENCY CARE SKILLS FOR OCCUPATIONAL HEALTH NURSES EXAMINATION*

1. When the blood supply to part of the brain is cut off, impairing the function of the cells in that part of the brain, the patient is said to have suffered:

   1. heart attack
   2. stroke
   3. chronic heart failure
   4. an attack of angina pectoris
   5. femoral occlusion

2. When a patient has cramps in the upper right abdomen, the O.H.N. will suspect:

   1. appendicitis
   2. bowel obstruction
   3. ectopic pregnancy
   4. gall bladder infection
   5. ulcers

3. Which of the following poisonous substances should not be eliminated by vomiting:

   1. aspirin
   2. strong corrosive agent
   3. ipecac
   4. tranquilizers
   5. sleeping pills

4. Which of the following emergencies is most serious:

   1. heat cramps
   2. heat exhaustion
   3. heat prostration
   4. heat stroke
   5. heat trauma

5. When using triage to determine handling of a multi-victim accident, the O.H.N. would assign highest priority to:

   1. shock
   2. cardiac arrest
   3. uncontrolled bleeding
   4. all of the above
   5. 2 and 3 only

*Developed by Patricia Clapp, R. N., COHN

6. Cardiac arrest usually occurs after breathing has been interrupted for:

   1. 30 seconds
   2. 1 to 2 minutes
   3. 1 to 3 minutes
   4. 2 to 4 minutes
   5. 4 to 6 minutes

7. In the second stage of labor:

   1. the cervix is dilated
   2. the baby has moved into the birth canal
   3. the mother may feel that she has to move her bowels
   4. pains are more severe
   5. all of the above

8. If the O.H.N. should find evidence of bleeding from the cord after it is cut, she/he should:

   1. rush the baby and mother to a hospital
   2. ignore the bleeding
   3. tie off the cord again, several inches from the first closure
   4. untie the cord and then re-tie it
   5. none of the above

9. The most common of abnormal deliveries is:

   1. arm presentation
   2. leg presentation
   3. breech presentation
   4. head presentation
   5. shoulder presentation

10. If a patient is in immediate danger due to a definite threat to survival from a fire, smoke or building collapse, the O.H.N. should:

    1. complete her/his primary survey before removing the patient
    2. complete her/his secondary survey before removing the patient
    3. take immediate steps to remove her/him from the hostile environment
    4. control severe bleeding injuries before removing the patient
    5. wait for help to arrive

11. The O.H.N.'s initial response to an emotionally disturbed person should be:

    1. in a manner to rapidly gain total control of the situation
    2. one without verbal communication with the person
    3. a quiet, unhurried approach
    4. rapid physical restraint followed by verbal communication
    5. to call the local Mental Health Center

12. The correct order of treatment for inhaled toxic substances is:

    1. supplemental oxygen
    2. artificial respiration or CPR
    3. removal to fresh air
    4. 1 then 3 and 2 as indicated
    5. 3 then 1 and 2 as indicated

13. The O.H.N. is called to an accident scene where a victim has fallen from an overhead platform. She/he notes _____ which suggests chest injuries:

    1. the left side of the chest expands more than the right on inspiration
    2. the victim complains of pain when breathing
    3. obvious dyspnea
    4. all of the above
    5. 2 and 3 only

14. The O.H.N.'s examination reveals the victim has numbness and possible paralysis below the fracture site in the lower leg. This symptom indicates:

    1. both bones are probably broken
    2. the ankle is broken also
    3. a normal occurrence in below the knee fractures
    4. impairment of blood flow
    5. the bone ends are compressing the nerves

15. In triage, multiple fractures and back injuries are:

    1. highest priority
    2. second priority
    3. lowest priority
    4. not categorized in triage
    5. sent when ambulance space permits

16. A victim suspected of having a spinal injury is most easily placed on a long back board by use of the:

    1. traction blanket lift
    2. four-man log-roll
    3. two-man carry
    4. straightback chair
    5. fireman's drag

17. The important considerations when using a bag-mask resuscitator are:

    1. airway must be open
    2. mask must form a tight seal
    3. pull chin upward and back
    4. all the above
    5. only 2 and 3 above

18. Oxygenated blood leaves the lungs through the pulmonary _____ and empties into the _____.

1. artery, right atrium
2. artery, left atrium
3. vein, right atrium
4. vein, left atrium
5. none of the above

19. In a heart attack, pain results when:

1. the blood vessles go into spasm
2. the muscles go into spasm
3. the muscle is deprived of blood
4. collateral circulation develops
5. there is shock

20. Which of the following emergencies may indicate the need for intravenous infusion:

1. heart attack
2. anaphylactic shock
3. internal injuries
4. laceration of the upper arm
5. all of the above

21. Two means of measuring the effectiveness of CPR are:

1. presence of a carotid pulse with compressions and pupils that respond to light
2. presence of a carotid pulse with compressions and dilated pupils
3. constricted pupils and dry skin
4. presence of a carotid pulse with compressions and normal skin color
5. all of the above

22. The O.H.N. may have emergency situations necessitating extrication of a victim. This is best defined as:

1. moving from a floor to a stretcher
2. moving from the site of injury to the medical department
3. transporting to a hospital emergency room
4. freeing the victim from anything that binds or holds him/her
5. moving the victim from a hostile environment

23. Air splints are most commonly used for extremity fractures. Another important use is:

    1. pressure dressing on closed soft tissue injuries to control external bleeding
    2. pressure dressing on closed soft tissue injuries to control internal bleeding
    3. pressure dressing on open soft tissue injuries to control external bleeding
    4. all of the above
    5. none of the above

24. The purpose of the secondary survey is to find:

    1. clues to the cause of the accident
    2. immediate life-threatening problems
    3. signs of heart action
    4. additional, unseen injuries which can be aggravated by mishandling
    5. signs of adequate breathing

25. The tube that carries air to the lungs is called the:

    1. trachea
    2. epiglottis
    3. bronchus
    4. larynx
    5. pharynx

26. When an electrical burn has occurred, the O.H.N. must always:

    1. wash burned tissue from the wound
    2. identify the voltage of the current
    3. locate the wounds at the points of entry and exit
    4. note the time the accident occured
    5. estimate the amount of damaged tissue

27. Life is sustained by a close relationship:

    1. between the heart and the lungs
    2. between the lungs and the brain
    3. between the heart and the brain
    4. among the heart, the lungs and the brain
    5. none of the above

28. A noticeable blue or gray color in the tongue, lips, nail beds, and skin is a sign that the brain is getting too little oxygen. This sign is called:

    1. oxygen lack
    2. halitosis
    3. cyanosis
    4. symbiosis
    5. all of the above

29. The O.H.N. must remember that radiation injury and _____ often occur in the same victim and increase the overall severity of injury:

1. hair loss
2. vomiting
3. burn injury
4. heat exhaustion
5. gamma rays injury

30. If the airway is open and the patient is still not breathing, it becomes necessary to ventilate the lungs artifically. Of the many artificial techniques available, the method that is superior to all others is:

1. the back-pressure, arm-lift method
2. use of a mechanical resuscitator
3. mouth-to-mouth resuscitation
4. the chest-pressure, arm-lift method
5. the front pressure method

31. Excitement is the usual response of victims and bystanders at the time of the accident. The O.H.N. can help allay this by:

1. remaining calm
2. taking the necessary steps for treatment in a quick, calm, reassuring manner
3. verbally reassuring the victim
4. calmly putting bystanders to assisting with care
5. all of the above

32. An advantage of bag-mask resuscitators is:

1. no training is necessary
2. virtually eliminates vomiting in the patient
3. they are fairly inexpensive
4. can be used under any circumstances
5. an oxygen line can be attached to provide oxygen

33. When ventilating an adult neck-breathing patient, the O.H.N. should provide breaths at the rate of:

1. 60 a minute
2. 30 a minute
3. 20 a minute
4. 12 a minute
5. 5 a minute

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34. At the lower end of the sternum is a bony prominence that curves inward. This structure is called the:

1. xiphoid process
2. sternal process
3. clavicle
4. scapular process
5. steroid process

35. In providing artificial circulation of the blood when one O.H.N. is working alone, the sternum is compressed:

1. at the rate of about 12 per minute
2. at the rate of about 30 per minute
3. at the rate of about 60 per minute
4. at the rate of about 80 per minute
5. at a comfortable rate until qualified medical personnel take over

36. This mechanical method of resuscitation provides the patient with a much greater concentration of oxygen in a short time thereby greatly speeding the patient's recovery:

1. bag-mask resuscitator
2. mouth-to-mouth resuscitation
3. mouth-to-adjunct resuscitation
4. pressure-cycled resuscitator
5. volume-cycled resuscitator

37. When the O.H.N.'s hands are placed too high during chest compression, the damage to underlying structures may be:

1. fracture of ribs and lacerations to lung and heart
2. fracture of ribs and lacerations to lungs
3. fracture of collar bone
4. depression of xiphoid process with rupture of esophagus
5. depression of xiphoid process into liver

38. The first step in administering an intravenous infusion is:

1. selection of venipuncture site
2. preparation of infusion set
3. securing arm to an arm board
4. selection of the proper fluid
5. checking the fluid for clarity

39. The following method could be used to remove a foreign body obstructing the airway:

    1. finger probe
    2. chest thrust
    3. back blows
    4. abdominal thrust
    5. all of the above

40. Dextran, a most effective blood volume expander, should be used only under a direct order of a physician because:

    1. it is very expensive
    2. patient reactions are common
    3. it alters blood cell membranes making blood cross-matching impossible
    4. blood and blood plasma are superior treatment
    5. none of the above

41. Permanent visual impairment due to retinal injuries may result from exposure to:

    1. ultraviolet rays
    2. lasar
    3. infrared rays
    4. all of the above
    5. 2 and 3 only

42. When a patient is bleeding internally, the O.H.N. will:

    1. apply as much pressure as possible over the bleeding area
    2. not be able to do much but rush the patient to a medical facility
    3. treat the patient for shock and keep him/her comfortable
    4. give oxygen, treat for shock and transport to a medical facility
    5. not be able to do anything except keep the patient comfortable

43. Venous bleeding should be suspected when the blood is:

    1. the blood is bright red and is flowing steadily from the wound
    2. the blood is bright red and is spurting from the wound
    3. the blood is dark maroon and is flowing steadily from the wound
    4. the blood is dark maroon and is spurting from the wound
    5. the blood is dark maroon

44. The most effective method of controlling bleeding is by applying:

1. tourniquet
2. a sterile combined dressing
3. a multiple trauma bandage
4. direct pressure to the wound
5. pressure over the feeding artery

45. The O.H.N. should never try to replace dressing once they are in place because it risks:

1. releasing pressure on the end of the vessels where cut
2. interfering with the normal coagulation processes
3. increasing the chances of contamination
4. none of the above
5. all of the above

46. Severe bleeding from the leg may be controlled by pressure on the:

1. brachial artery
2. carotid artery
3. femoral artery
4. subclavian artery
5. temporal artery

47. In applying pressure over the carotid artery, the O.H.N. must be:

1. careful not to produce unconsciousness by restricting the flow of blood to the brain
2. aware that a patient may faint quite readily due to pressure on a special bundle of nerve tissue
3. careful not to squeeze the windpipe
4. all of the above
5. none of the above

48. The respiration of a person in shock include:

1. barely perceptible
2. shallow and weak
3. shallow and slow
4. shallow and rapid
5. cheyne stokes in nature

49. Patients with suspected internal bleeding should:

1. be treated for shock
2. given nothing by mouth
3. have a pressure bandage applied over the bleeding area
4. be given oxygen
5. all of the above

50. When using oxygen at the site of an emergency, the O.H.N. should remember that:

1. oxygen supports combustion
2. oxygen cannot be used in an area where a source of flame/fire exists
3. oxygen would be of little benefit at most emergency sites
4. 1 and 2 only
5. none of the above

51. Prompt sealing of a sucking chest wound may be accomplished by use of a:

1. vaseline gauze
2. large gauze dressing
3. plastic wrapping material
4. aluminum foil
5. all of the above

52. In caring for a patient with an impaled object, the O.H.N. must remember to:

1. not remove the object
2. prevent bleeding by covering the wound carefully
3. stabilize the object with bulky dressings
4. apply a bandage around the object and then cover it with a paper cup taped in place
5. all of the above

53. The type of shock caused by an inadequate functioning of the heart is:

1. cardiogenic shock
2. hemorrhagic shock
3. neurogenic shock
4. respiratory shock
5. septic shock

54. Loss of body fluids and changes in body chemistry produce:

1. hemorrhagic shock
2. metabolic shock
3. neurogenic shock
4. respiratory shock
5. septic shock

55. Which of the following is an indication of anaphylactic shock:

1. itching skin
2. burning feeling
3. swelling of the face and tongue
4. tightening or pain in the chest
5. all of the above

56. Anaphylactic shock should be considered:

1. an emergency only in a highly sensitized person
2. an emergency in a highly desensitized person
3. an emergency only if person has been stung about the face or head
4. a non-emergency situation
5. a true emergency situation

57. Of the problems listed below, which should the O.H.N. consider first when developing a course of treatment for a patient with severe facial injuries:

1. the patient may have received a fractured skull
2. the patient may have brain damage
3. a neck injury may also have been produced by the force of the accident
4. the lower jaw may be fractured, with loss of teeth
5. none of the above

58. If no spinal injuries are suspected, how should the O.H.N. position an accident victim with facial injuries in order to allow drainage and maintain an open airway:

1. seated upright with his/her head tilted forward
2. seated upright with his/her head tilted backward
3. flat on his/her back
4. lying on his/her stomach
5. lying on his/her side with head tilted back and face down

59. To control bleeding from the nose, the first step should be:

1. have the patient positioned forward with his/her head between his/her legs
2. have the patient sit upright with his/her head tilted backward
3. pinch the nostrils together
4. pack the nostrils with loose dressings
5. press on the area where the nose joins the forehead

60. Direct pressure and/or a pressure dressing should not be applied to:

1. a lacerated upper eye lid
2. a lacerated eyeball
3. a lacerated upper arm
4. a sucking chest wound
5. a lacerated ear

61. Eye injuries can be classified in the following:

1. foreign objects
2. chemicals, heat and light burns
3. lacerations and contusions
4. all of the above
5. none of the above

62. The most common eye injuries are caused by flying objects that lodge in the:

1. outer surface of the eyeball
2. retina
3. optic nerve
4. vitreous fluid
5. none of the above

63. The principle danger associated with chest injuries are internal bleeding and:

1. injury to the ribs
2. injury to the pleura
3. punctured organs
4. all of the above
5. none of the above

64. The Material Safety Data Sheet will provide the O.H.N. with:

1. chemical and trade names of a toxic substance
2. the specific hazardous ingredients of the substance
3. effects of overexposure
4. emergency care if overexposure occurs
5. all of the above

65. Sucking chest wound is the condition in which:

1. the sternum has collapsed
2. the diaphragm has collapsed or ruptured
3. the chest cavity has been penetrated by a foreign object
4. the muscles around the heart have been torn loose
5. none of the above

66. The principle sign of pneumothorax is:

1. the hole in the chest wall
2. the patient spitting up or coughing blood
3. the patient in a coma
4. the patient with sharp pain
5. none of the above

67. A collapsed lung interferes not only with respiration but also with the function of the:

1. liver
2. brain
3. heart
4. spleen
5. kidneys

68. A condition in which air pressure within the chest cavity builds up to such a degree that it presses the lung against the heart is called:

1. tension pneumothorax
2. flail chest
3. tension pneumonic subcutaneous emphysema
4. tension pneumophagic traumatic asphyxia

69. A condition in which the patient's eyes are swollen tightly shut, the size of the chest is increased, the neck becomes massive and the scrotum is greatly swollen is known as:

1. emphysema
2. subcutaneous emphysema
3. tension pneumothorax
4. pleurisy
5. none of the above

70. The central nervous sytem is composed of:

1. the brain
2. the brain and the spinal cord
3. the spinal cord
4. the spinal cord and motor nerves
5. the brain and sensory nerves

71. Leakage of cerebrospinal fluid from the nose and ears is a reliable sign that the skull has been fractured and that the underlying _____ has been lacerated:

1. dura mater
2. pia mater
3. arachnoid membrane
4. spinal membrane
5. gray horns

72. Which of the following signs and symptoms are associated with spinal injuries:

1. pain and tenderness
2. deformity
3. cuts and bruises
4. paralysis
5. all of the above

73. The test shows that the patient has feeling and function in the lower extremities. What does this tell the O.H.N.:

1. there is no injury to the legs
2. there is no injury to the spinal cord below the cervical region
3. there is no injury to the spinal cord below the thoracic region
4. there is no injury to the spinal cord below the lumbar region
5. there is no injury to the spinal cord below the sacral region

74. An O.H.N. makes the following observations in a patient suspected of having a spinal cord injury. Patient can feel touch in his/her arms, can wiggle his/her fingers, and can raise his/her arms, similarly for his/her legs. What conclusion should the O.H.N. reach:

1. patient may not have a cord injury
2. patient probably has a cord injury below the neck
3. patient probably has a cord injury in the area of the neck
4. patient has a brain tumor
5. none of the above

75. Which of the following may be used to immobilize the head of a patient with an injury to the neck:

1. cervical collar
2. folded blanket
3. folded multi-trauma dressing
4. bath towel
5. all of the above

76. Of the segments of the spinal column, which one is most often injured through improper lifting of a heavy load:

1. cervical spine
2. sacral spine
3. thoracic spine
4. lumbar spine
5. coccygeal spine

77. The usual rate of flow for intravenous infusions in a standard drip chamber is:

1. 20 drops/minute to equal 125 milliliters/hour
2. 250 milliliters/hour
3. 15 milliliters/minute
4. 40 drops/minute to equal 125 milliliters/hour
5. a steady flow which does not cause swelling at the puncture site

78. Flushing the eyes with large amount of water or a sterile saline solution is the immediate treatment for:

1. light burns
2. thermal burns
3. foreign bodies
4. chemical burns
5. all of the above

79. Persons exposed to ultraviolet rays from an arc welding unit will complain of:

1. immediate pain without visual impairment
2. immediate pain and some blurred vision
3. extreme pain three to five hours after exposure
4. mild pain and blurred vision
5. gradual loss of vision five to eight hours after exposure

80. It is extremely important to make the coronary patient relax because:

1. it will help relax the muscles in the blood vessels and increase the blood flow
2. it will help increase the pressure in the blood vessels to increase flow
3. it will help decrease the pressure in the blood vessels
4. it will slow the blood flow to the heart
5. none of the above

81. Giving a high concentration of oxygen to a patient with a heart attack:

1. helps him/her to rest more easily
2. intensifies his/her fear
3. can aggravate his/her condition
4. may cause him/her to feel as though he/she was being smothered
5. none of the above

82. Attacks of angina are brought on by:

1. agitation
2. emotional stress
3. strenuous physical exertion
4. all of the above
5. none of the above

83. Nitroglycerine relieves cardiac pain by:

1. deadening the sense of pain
2. dissolving tiny clots
3. increasing cardiac output
4. dilating blood vessels
5. increasing blood vessels

84. The most common cause of a stroke is blockage of the cerebral artery by a clot that forms inside the artery. This condition is called:

1. coronary thrombosis
2. cerebral thrombosis
3. cerebral hemorrhage
4. coronary hemorrhage
5. cerebral occlusion

85. The O.H.N. can provide immediate relief by giving the patient some form of sugar in the diabetic disorder known as:

1. diabetic coma
2. diabetic shock
3. insulin coma
4. insulin shock

86. Blood in the vomitus may indicate to the O.H.N. that the patient has:

1. appendicitis
2. bowel obstruction
3. ectopic pregnancy
4. ruptured uterus
5. ulcers

87. The one sign of carbon monoxide poisoning that is usually reliable and unmistakable is a:

1. cherry red color
2. dead white color
3. decidedly blue color
4. mottled pink appearance
5. flushed color

88. Which of the following groups of drugs cause constriction of the pupils of the eyes:

1. barbiturates
2. stimulants
3. hallucinogens
4. narcotics
5. marijuana

89. First degree and small second degree burns can be made less painful by:

1. covering entire area with a sterile burn pad
2. covering with a waterless type ointment
3. spraying with a substance such as band-aid
4. applying cold towels
5. none of the above

90. Which difficulties should always be anticipated when the patient has been exposed to hot gases:

1. cardiac
2. esophageal
3. gastric
4. lingual
5. respiratory

91. The most common sites for foreign bodies in the eye are:

1. under the upper lid or on the cornea
2. impaled in the lids or cornea
3. inside the lower lid or on the cornea
4. on the conjunctiva or the cornea
5. under the upper lid, on the conjunctiva or on the cornea

92. The stage in childbirth when the presenting part of the baby first becomes visible at the vaginal opening is called:

1. crown
2. crowning
3. areola
4. crucible
5. callus

93. Following delivery of the baby, the O.H.N. should first:

1. gently slap the baby's bottom
2. gently slap the baby's feet
3. cut the umbilical cord
4. clean the baby's air passages
5. check the mother for bleeding

94. When the placenta is delivered, it should be:

1. wrapped in a towel and transported to the hospital with the mother and baby
2. examined by the O.H.N. at the site for completeness
3. discarded
4. sent to a laboratory for analysis
5. none of the above

95. Abnormal delivery situations which should be considered true emergencies are:

1. breech presentation
2. prolapsed umbilical cord
3. arm or leg presentation
4. all of the above
5. 1 and 3 only

96. The danger of a prolapsed umbilical cord is that:

1. the cord may tear during delivery
2. the baby may suffocate due to the lack of oxygen
3. the cord may strangle the baby
4. the cord may pull the placenta free when the baby is delivered
5. all of the above

97. The following steps should be taken to care for a premature baby:

1. keep warm by wrapping in a blanket and then aluminum foil
2. clear mouth and nose of fluid and mucous
3. prevent bleeding from cord
4. administer oxygen
5. all of the above

98. During examination and treatment for breathing difficulties, an effective means of stabilizing a patient with facial and possible cervical spine injuries is:

1. position someone behind the patient where he/she can maintain traction on the patient's head
2. position the patient so that he/she is resting on his/her side
3. position the patient with his/her head tilted back and his/her face upward
4. position the patient with his/her head tilted back and his/her face down
5. none of the above

99. Critical time for the reestablishment of an airway and ventilation is:

1. one to two minutes
2. two to three minutes
3. four minutes
4. five to six minutes
5. over six minutes

100. The general signs of rib fracture include:

1. tenderness
2. painful movement
3. deformity
4. local pain
5. all of the above

101. Which are considered important signs that the O.H.N. can identify in a suspected head injury where no obvious wounds are present:

1. deformity of the skull
2. blood or clear, water-like fluid in the ears and nose
3. discoloration of the soft tissues under the eyes
4. unequal pupils
5. all of the above

102. The bruise which results on the brain when a blunt object forcibly strikes the skull is called a:

1. trauma
2. contusion
3. concussion
4. laceration
5. convulsion

103. The O.H.N. conducts a survey for injury to the spinal cord and finds loss of function on one side indicating the possibility of:

1. pressure on the spinal cord
2. an injury in the lumbar region
3. an injury at the third cervical vertebrae
4. a stroke
5. no injury to the cord

104. Provision for locomotion is made by the manner in which bones come together at the:

1. cartilage
2. ligaments
3. tendons
4. joints
5. muscle

105. Strains are injuries to the _____ caused by overexertion:

1. joints
2. bones
3. cartilage
4. ligaments
5. muscles

106. An avulsed eye, one that has been torn from the socket, should be treated:

1. with a loose sterile bandage
2. only with sterile water
3. no special care
4. in the same manner as an impaled object
5. with a thick dressing

107. For a patient with bruises on his shoulders or lower back and abdomen the O.H.N. should suspect:

1. closed injuries to the skull
2. injuries to the spine
3. deformities of the spine
4. fragmentation of the skull
5. paralysis

108. Which of the following could be used in an extreme emergency to move a patient with a spinal injury:

1. two-man seat carry
2. blanket drag
3. fireman's drag
4. fireman's carry
5. pack-strap carry

109. Cardiopulmonary resuscitation is another name for the:

1. the restoration of breathing
2. restoration of circulation
3. artificial restoration of breathing and circulation
4. artificial restoration of breathing
5. manual method of restoring breathing

106

110. The ABC technique for cardiopulmonary resuscitation includes:

1. establish airway, inflate patient's lungs, circulate the blood
2. establish airway, properly situate patient, apply pressure
3. properly situate patient, establish airway, apply pressure
4. properly situate patient, establish airway, interpose ventilations
5. inflate patient's lungs, circulate the blood, interpose ventilations

111. The pressure point for compressing the patient's chest is located at the:

1. center of the sternum
2. center of the upper half of the sternum
3. center of the lower half of the sternum
4. upper end of the sternum
5. lower end of the sternum

112. In providing artificial circulation of the blood, when two rescuers are working, the sternum is compressed:

1. at the rate of about 12 per minute
2. at the rate of about 30 per minute
3. at the rate of about 60 per minute
4. at the rate of about 80 per minute
5. at a comfortable rate until qualified medical personnel take over

113. In providing CPR for an adult, the O.H.N. should compress the breast bone about:

1. four inches
2. three to four inches
3. one and a half to two inches
4. one inch
5. one half to one inch

114. Which type of resuscitation should not be used to provide the pulmonary phase of CPR:

1. bag-mask resuscitator
2. mouth-to-nose resuscitation
3. mouth-to-adjunct resuscitator
4. pressure-cycled resuscitator
5. volume-cycled resuscitator

115. When the O.H.N.'s hands are placed too low during chest compression, the damage to underlying structures may be:

1. fracture of ribs and lacerations to lungs and heart
2. fracture of ribs and lacerations to lungs
3. fracture of collar bone
4. depression of xiphoid process with rupture of the esophagus
5. depression of xiphoid process into liver

116. Patients with injuries to the bones and joints require:

1. rapid transportation to the hospital
2. rapid treatment for a life-threatening type injury
3. no attention until arrival at the hospital
4. slow, deliberate treatment and transportation
5. none of the above

117. A rigid splint must be long enough in order that it can be secured:

1. well above and below the fracture site
2. below the fracture site
3. above the fracture site
4. to the unaffected limb
5. none of the above

118. Traction is best defined as:

1. the reduction of a fracture
2. the stabilization of a broken bone
3. the realignment of a broken limb until the broken ends slip into place
4. the stretching of a broken limb until the broken ends slip into place
5. the application of tension to a broken limb

119. While it is not possible to tell how much traction should be developed when splinting, a good rule of thumb is to apply traction until:

1. the bone is stabilized
2. the fracture is reduced
3. the limb is noticeably stretched
4. the bone ends slip together
5. the patient feels relief

120. A fractured elbow should be immobilized in the position in which it is found because:

1. further fractures may occur with movement
2. radial fractures may occur with movement
3. of the possibility of damage to nerves and blood vessels
4. of the possibility of deformity
5. a dislocation may occur with movement

121. If a patient has fractured his/her hip:

1. he/she will be able to raise the injured leg if lying on his/her back
2. his/her foot will be characteristically turned outward
3. he/she will not be able to raise the uninjured leg
4. he/she will be able to flex the injured leg below the knee
5. the injured hip will be rotated backward

APPENDIX H

Scoring Code
Emergency Care Skills for Occupational Health Nurses Examination

1.	2	32.	5	63.	3	94.	1
2.	4	33.	4	64.	5	95.	4
3.	2	34.	1	65.	3	96.	2
4.	4	35.	4	66.	1	97.	5
5.	4	36.	5	67.	3	98.	1
6.	5	37.	3	68.	1	99.	3
7.	5	38.	4	69.	2	100.	5
8.	3	39.	5	70.	2	101.	5
9.	3	40.	3	71.	1	102.	2
10.	3	41.	5	72.	5	103.	4
11.	3	42.	4	73.	2	104.	4
12.	5	43.	3	74.	1	105.	5
13.	4	44.	4	75.	5	106.	4
14.	5	45.	5	76.	4	107.	2
15.	2	46.	3	77.	4	108.	2
16.	2	47.	4	78.	4	109.	3
17.	4	48.	4	79.	3	110.	1
18.	4	49.	5	80.	1	111.	3
19.	3	50.	4	81.	1	112.	3
20.	5	51.	5	82.	4	113.	3
21.	1	52.	5	83.	4	114.	4
22.	4	53.	1	84.	2	115.	5
23.	3	54.	2	85.	4	116.	4
24.	4	55.	5	86.	5	117.	1
25.	1	56.	5	87.	1	118.	2
26.	3	57.	3	88.	4	119.	5
27.	4	58.	5	89.	4	120.	3
28.	3	59.	3	90.	5	121.	2
29.	3	60.	2	91.	1		
30.	3	61.	4	92.	2		
31.	5	62.	1	93.	4		

APPENDIX I

List of Competencies and Skills for Occupational Health Nurses*

These competencies and skills are based upon the basic scope of practice for occupational health nurses. Graduates of this course have received instruction in the theory and have participated in skills practice. They can be expected to perform at the level indicated below.

LEVELS OF PERFORMANCE		
: Can Perform Satisfactorily without Assistance and/or Supervision	: Can Perform Satisfactorily with Minimal Assistance and/or Supervision	: Requires Instruction and Supervision Perform Entire Skill

COMPETENCIES AND SKILLS

*Should be developed by instructors in consultation with and assistance of occupational health nurses